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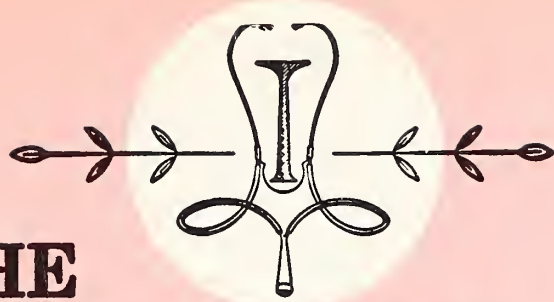












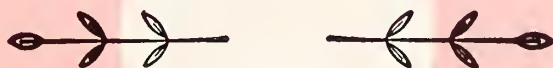
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# The JOURNAL of the KANSAS MEDICAL SOCIETY

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## RESOURCE FOR PHYSICIANS IN TROUBLE

The Kansas Medical Society Impaired Physicians Program is now operational. If you desire more information concerning this program, if you know an impaired colleague who needs help, or if you are concerned about yourself or your spouse, please contact one of the Committee members nearest you, as listed below, or the KMS Executive Office. All such contacts will be held in strictest confidence and the caller need not reveal his name, if he/she so desires.

Alcoholism, other drug abuse, and medical/neurological/psychological problems are potentially treatable conditions. All impaired physicians should be encouraged to seek help at the earliest possible time in order to retain or regain full effectiveness to practice medicine. Please contact one of the following:

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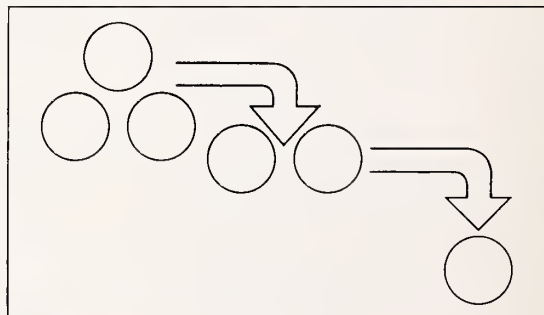
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\*Sellers EM: *Drug Metab Rev* 8(1):5-11, 1978



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# Valium® diazepam/Roche

**Before prescribing, please consult complete product information, a summary of which follows:**

**Indications:** Management of anxiety disorders, or short-term relief of symptoms of anxiety; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders; atetosis, stiff-man syndrome; convulsive disorders (not for sole therapy)

The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age.

Acute narrow angle glaucoma, may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication, abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported, should these occur, discontinue drug. Isolated reports of neutropenia, jaundice, periodic blood counts and liver function tests advisable during long-term therapy.

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At the request of the Impaired Physicians Committee of the Kansas Medical Society, space has been made available in the *Journal* for a section featuring articles relating to concerns and problems unique to the lifestyle of the physician. Articles may focus on communication, stress and distress, responsibilities to self, medical marriage, recreation and leisure, and related topics. Manuscripts or suggested topics and questions are solicited and should be submitted to:

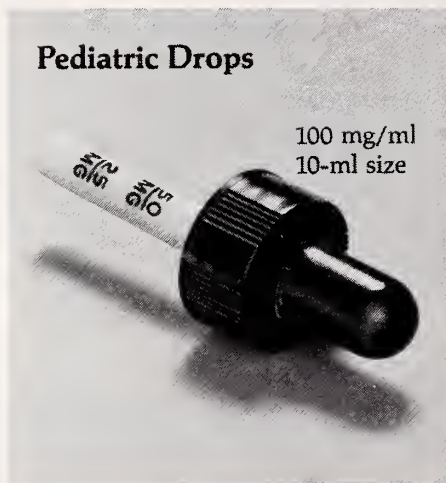
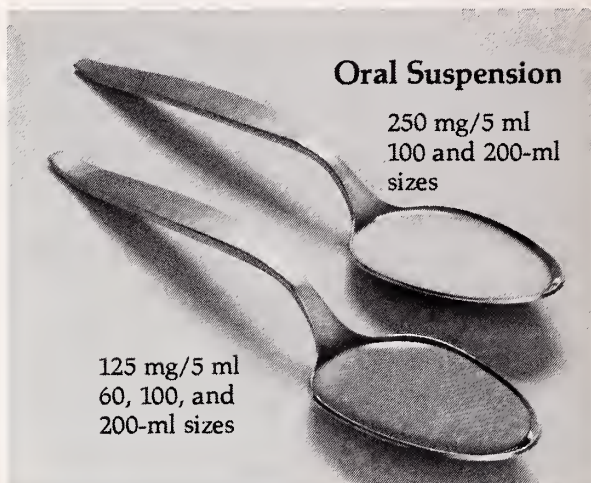
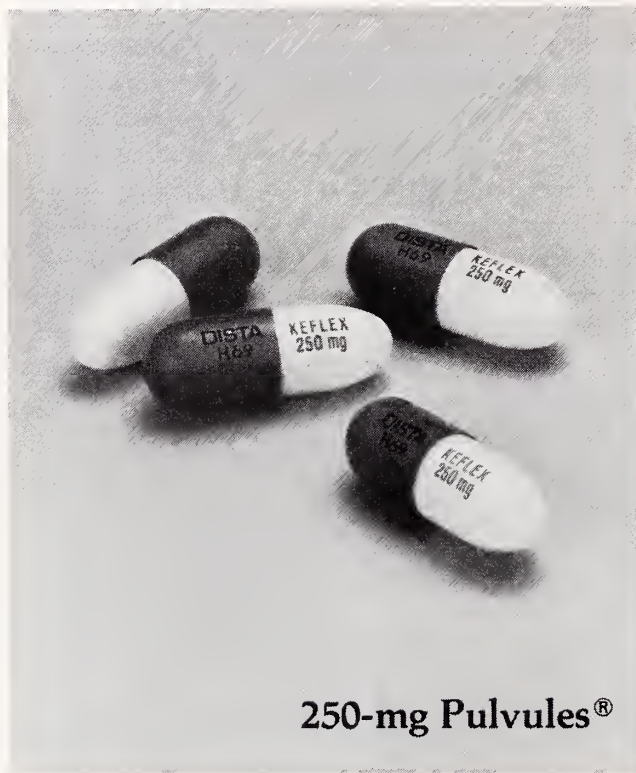
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Hyoscyamine Sulfate	0.19 mg
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### DESCRIPTION

Each prolonged action tablet contains:

Phenylephrine Hydrochloride	25 mg
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Hyoscyamine Sulfate	0.19 mg
Atropine Sulfate	0.04 mg
Scopolamine Hydrobromide	0.01 mg

Ru-Tuss Tablets act continuously for 10 to 12 hours.

Ru-Tuss Tablets are an oral antihistaminic, nasal decongestant and anti-secretory preparation.

**INDICATIONS AND USAGE** Ru-Tuss Tablets provide relief of the symptoms resulting from irritation of sinus, nasal and upper respiratory tract tissues. Phenylephrine and phenylpropanolamine combine to exert a vasoconstrictive and decongestive action while chlorpheniramine maleate decreases the symptoms of watering eyes, post nasal drip and sneezing which may be associated with an allergic-like response. The belladonna alkaloids, hyoscyamine, atropine and scopolamine further augment the anti-secretory activity of Ru-Tuss Tablets.

**CONTRAINDICATIONS** Hypersensitivity to antihistamines or sympathomimetics. Ru-Tuss Tablets are contraindicated in children under 12 years of age and in patients with glaucoma, bronchial asthma and women who are pregnant. Concomitant use of MAO inhibitors is contraindicated.

**WARNINGS** Ru-Tuss Tablets may cause drowsiness. Patients should be warned of the possible additive effects caused by taking antihistamines with alcohol, hypnotics, sedatives or tranquilizers.

**PRECAUTIONS** Ru-Tuss Tablets contain belladonna alkaloids, and must be administered with care to those patients with glaucoma, or urinary bladder neck obstruction. Caution should be exercised when Ru-Tuss Tablets are given to patients with hypertension, cardiac or peripheral vascular disease or hyperthyroidism. Patients should avoid driving a motor vehicle or operating dangerous machinery (See Warnings).

**OVERDOSAGE** Since the action of sustained release products may continue for as long as 12 hours, treatment of overdoses directed at reversing the effects of the drug and supporting the patient should be maintained for at least that length of time. Saline cathartics are useful for hastening evacuation of unreleased medication. In children and infants, antihistamine overdosage may produce convulsions and death.

**ADVERSE REACTIONS** Hypersensitivity reactions such as rash, urticaria, leukopenia, agranulocytosis, and thrombocytopenia may occur. Other adverse reactions to Ru-Tuss Tablets may be drowsiness, lassitude, giddiness, dryness of the mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, tachycardia, hypotension/hypertension, faintness, dizziness, tinnitus, headache, incoordination, visual disturbances, mydriasis, xerostomia, blurred vision, anorexia, nausea, vomiting, diarrhea, constipation, epigastric distress, hyperirritability, nervousness, dizziness and insomnia. Large overdoses may cause tachypnea, delirium, fever, stupor, coma and respiratory failure.

**DOSAGE AND ADMINISTRATION** Adults and children over 12 years of age, one tablet morning and evening. Not recommended for children under 12 years of age. Tablets are to be swallowed whole.

### HOW SUPPLIED:

Bottles of 100 Tablets	NDC 0524-0058-01
Bottles of 500 Tablets	NDC 0524-0058-05

Federal law prohibits dispensing without prescription.

# COUGH

## RU-TUSS<sup>®</sup> EXPECTORANT

### DESCRIPTION

Each fluid ounce of Ru-Tuss Expectorant contains:

Codeine Phosphate	65.8 mg
<b>(WARNING: MAY BE HABIT FORMING)</b>	
Phenylephrine Hydrochloride	30 mg
Phenylpropanolamine Hydrochloride	20 mg
Pheniramine Maleate	20 mg
Pyriminamine Maleate	20 mg
Ammonium Chloride	200 mg
Alcohol	5%

Ru-Tuss Expectorant is an oral antitussive, antihistaminic, nasal decongestant and expectorant preparation.

**INDICATIONS AND USAGE** Ru-Tuss Expectorant is indicated for symptomatic relief of upper respiratory congestion associated with pharyngitis, tracheitis, bronchitis, and allergic rhinitis. Also, for the temporary relief of symptoms associated with hay fever, allergies, nasal congestion and cough due to the common cold.

**CONTRAINDICATIONS** Hypersensitivity to antihistamines. Concomitant use of an anti-hypertensive or antidepressant drug containing a monoamine oxidase inhibitor is contraindicated.

Ru-Tuss Expectorant is contraindicated in patients with glaucoma, bronchial asthma and in women who are pregnant.

**WARNINGS** Ru-Tuss Expectorant contains codeine phosphate, therefore, the patient should be warned of the potential that this drug may be habit forming. Ru-Tuss Expectorant may cause drowsiness. Patients should be warned of the possible additive effect caused by taking antihistamines with alcohol, hypnotics, sedatives and tranquilizers.

**PRECAUTIONS** Patients taking Ru-Tuss Expectorant should avoid driving a motor vehicle or operating dangerous machinery (See Warnings). Caution should be taken with patients having hypertension, diabetes, hyperthyroidism and cardiovascular disease.

Caution should also be used in patients with pulmonary, hepatic or renal insufficiency.

**ADVERSE REACTIONS** Ru-Tuss Expectorant may cause drowsiness, lassitude, giddiness, dryness of mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, tachycardia, hypotension/hypertension, faintness, dizziness, tinnitus, headache, incoordination, visual disturbances, mydriasis, xerostomia, blurred vision, anorexia, nausea, vomiting, diarrhea, constipation, epigastric distress, hyperirritability, nervousness and insomnia. Overdoses may cause restlessness, excitation, delirium, tremors, euphoria, metabolic acidosis, stupor, tachycardia and even convulsions.

**DOSAGE AND ADMINISTRATION** Adults: 1 or 2 teaspoonfuls, orally, every 4 hours, not to exceed 10 teaspoonfuls in any 24-hour period.

Children 6 to 12 years of age: ½ the adult dose, not to exceed 6 teaspoonfuls in any 24-hour period. Children 2 to 6 years of age: ½ teaspoonful every 4 hours, not to exceed 3 teaspoonfuls in any 24-hour period. Children under 2 years of age: Use as directed by a physician.

### HOW SUPPLIED

Pint bottles (16 fl. oz.)	NDC 0524-1010-16
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Pioneers in Medicine For the Family



**PHYSICIAN RECRUITMENT AND THE HOSPITAL**, by Harry E. Olson, Jr., Ph.D. Division of Medical Services and Center for Small or Rural Hospitals of the American Hospital Association, P.O. Box 96003, Chicago, IL 60690; 1980. 146 pages. \$12 members; \$15 non-members.

This book was prepared to assist hospital administrators, trustees, medical staff members and residents of small communities and rural areas in recruiting physicians. It provides an overview of physician recruitment in relation to overall long-range planning and offers practical suggestions to be used in structuring a recruitment program to meet the special needs of each community. It is intended primarily for small or rural communities with existing health care facilities, although small communities or isolated rural areas lacking hospital facilities and needing physicians may find much of the material of value.

The formula for successful physician recruitment lies somewhere between mere luck and pure science; it is a blend of careful planning, hard work and a commitment by the community to explore as many recruitment alternatives as appropriate.

This book deals with the recruitment process in its entirety and is based on the actual experiences of hospital administrators, trustees, and physician recruitment committee members involved in physician recruitment in communities throughout the United States.

The ultimate goal of any recruitment effort is to ensure needed medical care services for the residents of an area. Keeping this in mind, anyone working to recruit physicians must recognize that the real test of success lies not in getting a doctor to move to the community, but in keeping him or her there. Physician retention is a concern and challenge equal to physician recruitment and must be considered at every step of the recruitment program — G.C.

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### *An Open Letter to Kansas Physicians*

GOING, GOING, GONE — Sold to the highest bidder. Those are the words you will be hearing at the State Convention in Salina again this year. Although our convention is four months away, the Auxiliary is working on its second auction.

This year AMAERF and the Ronald McDonald Houses will benefit from the auction. Through AMAERF we help support the medical schools. The Ronald McDonald Houses are facilities to house the families of children who need long-term care in the hospital.

The success of the auction last year prompted us to hold another one this year on Friday night during the convention. Dinner will be included with your attendance at the auction.

Each county medical auxiliary will donate an item for the auction and we are asking individuals for donations as well. We hope you will plan to attend the auction for an evening of fun and merriment.

*Evelyn Huff,*

President

Kansas Medical Society Auxiliary

# MAKE YOUR PLANS NOW

Attend  
State Meeting

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# Information for Authors

## Manuscript Preparation

Manuscripts must be typewritten, double spaced leaving wide margins. Submit the original, plus one copy if possible.

**Titles** should be short, specific, and amenable to indexing. A subtitle if frequently used to keep the main title short.

**Summary:** all manuscripts should include a short abstract which is a factual (not descriptive) summary of the work.

**Author Responsibility:** the author is responsible for all statements made in his work, including changes made by the copy editor. Manuscripts are received with the explicit understanding that they are not simultaneously under consideration by any other publication. Publication elsewhere will be subsequently authorized at the discretion of the Editor.

**Galley Proof:** To make extensive changes in the article after the text has been set in type may require an additional cost which exceeds the original. The galley proof is for correction of ERRORS, and a rewriting of the article should be done on the original copy BEFORE it is submitted for publication.

**Drugs** should be called by their generic names; the trade names can be added in parentheses if they are considered important. All *units of measure* must be given in the metric system.

## References

Bibliographic references should not exceed 20 in number, documenting key publications. Personal communications and unpublished data should not be included. References should be arranged according to the order of citation, and not alphabetically. All references must be numbered consecutively and all must be cited in the text. Use the style of the AMA publications, giving: name of author, title of article, name of periodical, volume, pages, year.

## Illustrations

All material which cannot be set in type, such as photographs, line drawings, graphs, charts, tracings (for preparation of tables, see below) must be mounted on white cardboard. All must be identified on the back as to figure number, author's name, and an arrow indicating top. Legends should be typed double spaced on a separate sheet of paper, limited to a maximum of 30 words.

**Drawings and Graphs** should be done professionally in India ink on illustration board or high grade white drawing paper.

**Photographic** material should be submitted in duplicate as high contrast, glossy prints. Color illustrations will be accepted for publication only if the author assumes the cost.

THE JOURNAL will assume the cost of B/W engravings and cuts up to \$35 (or 5 cuts). Engraving cost for illustrations in excess of \$35 will be billed to the author.

## Tables

Because tables are set by hand, their cost is comparable to illustrations. A reasonable number of tables are allowed without cost to the author.

Tables should be self-explanatory and should supplement, not duplicate, the text. Since the purpose of a table is to compare or classify related items, the data must be logically and clearly organized. The relationship and comparison are established by the correct choice of column heads (captions of vertical columns) and stubs (left entries in horizontal listings).

Each table should be typed double spaced, including all headings, on separate sheets of lettersize paper. Oversize paper should not be used. Instead, repeat heads and stubs on a second sheet for tables requiring extra width. Number tables consecutively. Each table must have a title.

## Reprints

A reprint order form with a table covering cost will be sent with the galley proof to each contributor. Since the JOURNAL has no way to provide for reprints, they must be ordered by the author and purchased directly from the printer.

## Brief Summary of Prescribing Information.

**Indications and Usage:** Management of anxiety disorders or short-term relief of symptoms anxiety or anxiety associated with depressive symptoms. Anxiety or tension associated with stress of everyday life usually does not require treatment with an anxiolytic.

Effectiveness in long-term use, i.e., more than 4 months, has not been assessed by systematic clinical studies. Reassess periodically usefulness of the drug for the individual patient.

**Contraindications:** Known sensitivity to benzodiazepines or acute narrow-angle glaucoma.

**Warnings:** Not recommended in primary depressive disorders or psychoses. As with all CNS acting drugs, warn patients not to operate machinery or motor vehicles, and of diminished tolerance for alcohol and other CNS depressants.

**Physical and Psychological Dependence:** Withdrawal symptoms like those noted with barbiturates and alcohol have occurred following abrupt discontinuance of benzodiazepines (including convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Addictive-prone individuals, e.g. drug addicts and alcoholics, should be under careful surveillance when on benzodiazepines because of their predisposition to habituation and dependence. Withdrawal symptoms have also been reported following abrupt discontinuance of benzodiazepines taken continuously at therapeutic levels for several months.

**Precautions:** In depression accompanying anxiety, consider possibility for suicide.

For elderly or debilitated patients, initial daily dosage should not exceed 2mg to avoid oversedation. Terminate dosage gradually since abrupt withdrawal of any antianxiety agent may result in symptoms like those being treated: anxiety, agitation, irritability, tension, insomnia and occasional convulsions. Observe usual precautions with impaired renal or hepatic function. Where gastrointestinal or cardiovascular disorders coexist with anxiety, note that lorazepam has not been shown of significant benefit in treating gastrointestinal or cardiovascular complaints. Esophageal dilation occurred in rats treated with lorazepam for more than 1 year (6mg/kg/day). No effect dose was 1.25mg/kg/day (about 6 times maximum human therapeutic dose of 10mg/day). Effect was reversible only when treatment was withdrawn within 2 months of first observation. Clinical significance is unknown; but use of lorazepam for prolonged periods and in geriatrics requires caution and frequent monitoring for symptoms of upper GI disease. Safety and effectiveness in children under 12 years have not been established.

**ESSENTIAL LABORATORY TESTS:** Some patients have developed leukopenia; some have had elevations of LDH. As with other benzodiazepines, periodic blood counts and liver function tests are recommended during long-term therapy.

**CLINICALLY SIGNIFICANT DRUG INTERACTIONS:** Benzodiazepines produce CNS depressive effects when administered with such medications as barbiturates or alcohol.

**CARCINOGENESIS AND MUTAGENESIS:** No evidence of carcinogenic potential emerged in rats during an 18-month study. No studies regarding mutagenesis have been performed.

**PREGNANCY:** Reproductive studies were performed in mice, rats, and 2 strains of rabbits. Occasional anomalies (reduction of tarsals, tibia, metatarsals, malrotated limbs, gastroschisis, malformed skull and microphthalmia) were seen in drug-treated rabbits without relationship to dosage. Although all these anomalies were not present in the concurrent control group, they have been reported to occur randomly in historical controls. At 40mg/kg and higher, there was evidence of fetal resorption and increased fetal loss in rabbits which was not seen at lower doses. Clinical significance of these findings is not known. However, increased risk of congenital malformations associated with use of minor tranquilizers (chloridiazepoxide, diazepam and meprobamate) during first trimester of pregnancy has been suggested in several studies. Because use of these drugs is rarely a matter of urgency, use of lorazepam during this period should almost always be avoided. Possibility that a woman of child-bearing potential may become pregnant at institution of therapy should be considered. Advise patients if they become pregnant to communicate with their physician about desirability of discontinuing the drug. In humans, blood levels from umbilical cord blood indicate placental transfer of lorazepam and its glucuronide.

**NURSING MOTHERS:** It is not known if oral lorazepam is excreted in human milk like other benzodiazepines. As a general rule, nursing should not be undertaken while on a drug since many drugs are excreted in milk.

**Adverse Reactions,** if they occur, are usually observed at beginning of therapy and generally disappear on continued medication or on decreasing dose. In a sample of about 3,500 anxious patients, most frequent adverse reaction is sedation (15.9%), followed by dizziness (6.9%), weakness (4.2%) and unsteadiness (3.4%). Less frequent are disorientation, depression, nausea, change in appetite, headache, sleep disturbance, agitation, dermatological symptoms, eye function disturbance, various gastrointestinal symptoms and autonomic manifestations. Incidence of sedation and unsteadiness increased with age. Small decreases in blood pressure have been noted but are not clinically significant, probably being related to relief of anxiety.

**Overdosage:** In management of overdosage with any drug, bear in mind multiple agents may have been taken. Manifestations of overdosage include somnolence, confusion and coma. Induce vomiting and/or undertake gastric lavage followed by general supportive care, monitoring vital signs and close observation. Hypotension, though unlikely, usually may be controlled with Levarterenol Bitartrate Injection U.S.P. Usefulness of dialysis has not been determined.

**Ativan<sup>®</sup>**  
for (lorazepam)  
**Anxiety**

**Dosage:** Individualize for maximum beneficial effects. Increase dosage gradually when needed, giving higher evening dose before increasing daytime doses. Anxiety, usually 2-3mg/day given b.i.d. or t.i.d.; dosage may vary from 1 to 10mg/day in divided doses. For elderly or debilitated, initially 1-2mg/day; insomnia due to anxiety or transient situational stress, 2-4mg h.s.

**How Supplied:** 0.5, 1.0 and 2.0mg tablets.

**Wyeth Laboratories**  
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# Why one benzodiazepine and not another?

Are you concerned about long-acting metabolites? Many clinicians, as well as pharmacologists, are beginning to draw attention to this problem (see New England Journal of Medicine, April 5, 1979).

In contrast to some older benzodiazepines, Ativan (lorazepam) does not give rise to long-lasting active metabolites. As with all benzodiazepines, you should follow the usual precautions concerning co-administration with other CNS depressants and warn your patients against operating dangerous machinery and motor vehicles.

However, it is noteworthy that Ativan showed no clinical evidence of accumulation even when given in high doses over periods up to 6 months. The half-life of free lorazepam is about 12 hours; steady-state serum levels are attained in 2-3 days. Comparable data for diazepam: 20-50 hours and at least 7-10 days. (The pharmacokinetic profile of a drug can define such characteristics as absorption, distribution, metabolism and elimination but cannot, at present, be directly related to its therapeutic effectiveness.)

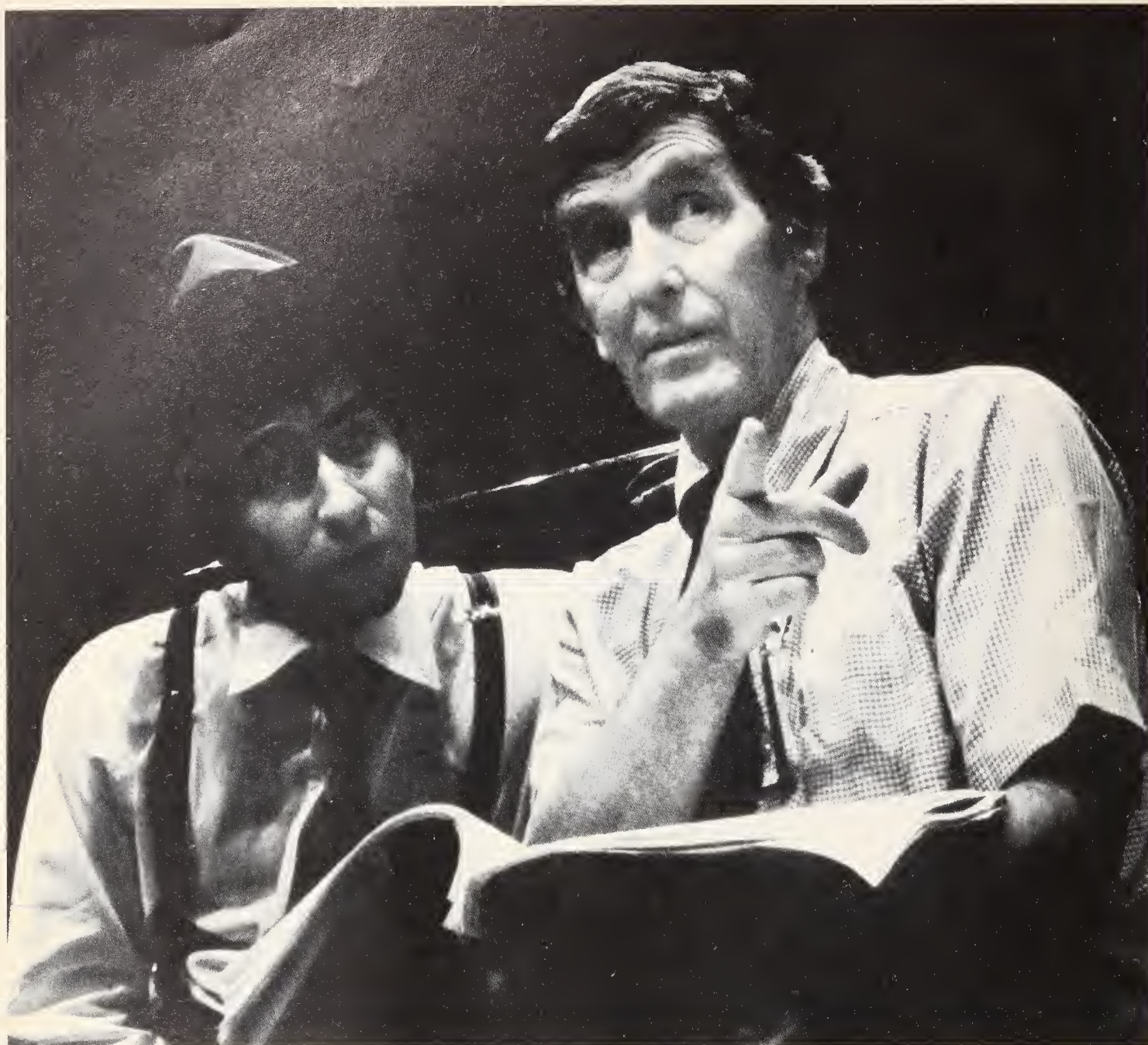
Ativan has a convenient b.i.d. or t.i.d. dosage schedule; it is compatible with a long list of other medications and, of course, it is a highly effective anxiolytic agent, as established in numerous nationwide, double-blind, controlled evaluations in thousands of patients.



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**Ativan<sup>®</sup>**  
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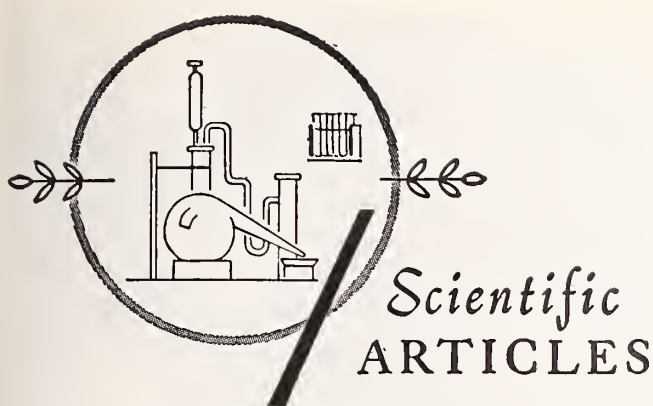


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# Brucella Abortus Septicemia

## *A Case of Abattoir-Associated Disease*

DORAI THIAGARAJAN, M.D., *Dayton, Ohio*

BRUCELLOSIS is still an endemic problem throughout the world. With considerable success in eradication of the disease in cattle and pasteurization of milk, the incidence of human brucellosis has declined in the United States during the past few decades; e.g., from 6,000 cases in 1947 to about 200 cases in 1973. Nevertheless, sporadic cases do occur and this disease has not yet become a medical curiosity.

The following case of brucellosis with *Brucella abortus* septicemia was seen at the Veterans Administration Medical Center in Topeka.

### Case Report

A 43-year-old white male veteran was admitted to the Medical Service of the Topeka Veterans Administration Medical Center in February 1977 for evaluation of fever of unknown origin. He had been suffering from arthralgia, intermittent fever, nausea and vomiting, myalgia, and weight loss for three weeks prior to admission. At the onset of his illness, the patient had been evaluated by his local physician and was treated with procaine penicillin injections daily for one week with no clinical response. Investigation at that time — including CBC, urinalysis, chest x-ray, and febrile agglutinins — produced negative results.

Physical examination of the patient on admission revealed him to be acutely ill with temperature, 40°C; and pulse, 90/min and regular. No skin lesions were

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**Brucellosis is still an endemic problem worldwide. The incidence of human brucellosis in the United States has declined during the past few decades, but sporadic cases do occur. Prognosis is generally good, but complications do occur, and this possible diagnosis should be kept in mind for patients with suggestive history.**

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noted, and examination of the chest revealed no cardiac murmur. The lungs were clear. Liver was tender and palpable 4 cm below the right costal margin. The remainder of the examination — including neurological evaluation for evidence of meningitis — was unremarkable. Initial laboratory tests showed: total white blood count, 5,800/cubic mm with a differential count of 10% bands, 59% polymorphs, 23% lymphocytes, 1% basophils, and 7% monocytes; hemoglobin, 11 gm/100 ml; platelets were adequate. Chest x-ray and urinalysis yielded negative results. Cultures of blood and urine were obtained. Occupational history revealed that the patient was working in a meat packing industry prior to his illness; therefore, an agglutination test for possible brucellosis was performed on the day of admission. In view of the hepatic tenderness, a liver biopsy was also performed and tissue was cultured,



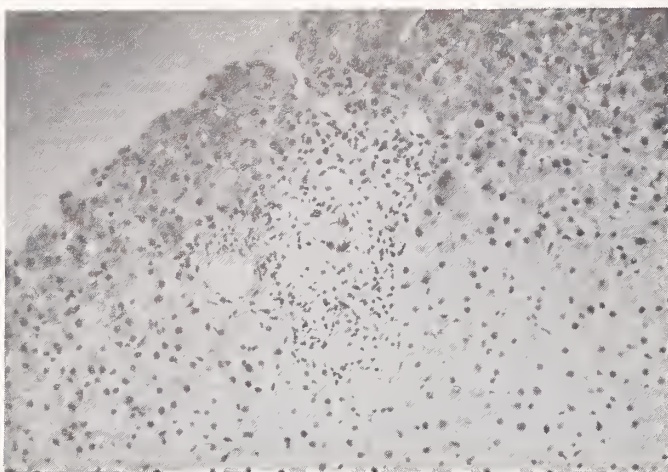


Figure 1. Liver biopsy showing non-caseating granuloma.

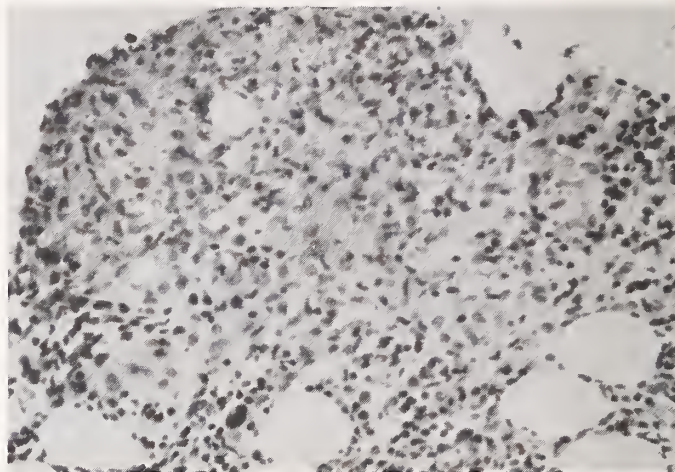


Figure 2. High power view of bone marrow biopsy showing granulomatous lesions.

although liver functions were only minimally abnormal. Bone marrow aspirate also was cultured and evaluated for anemia. The report of agglutination test of *Brucella abortus* was reported positive in 1:320 titer. He was immediately started on streptomycin, 1.5 gms, intramuscularly two times/day, and Achromycin, 1 gm orally four times/day. Subsequently, *Brucella abortus* was cultured from the blood, bone marrow, and liver. Non-caseating granulomata were noted in the liver and bone marrow. *Brucella* titers gradually increased to 1:1,2000 dilution, and subsequently began to decline two weeks after admission. Within 48 hours after beginning specific antimicrobial therapy, the patient became afebrile and clinically improved. Streptomycin was continued for four weeks and tetracycline therapy was continued for six weeks to prevent relapse.

The patient was asymptomatic on discharge, and subsequent followup revealed him to be in good physical condition. There was no evidence of endocarditis or relapse of brucellosis. Followup blood cultures were negative, and the *Brucella abortus* titer had declined to 1:160 three months after discharge. Investigation by the Kansas Department of Health showed no other case of acute brucellosis among his family members or fellow workers.

## Discussion

Brucellosis was first described in 1861 by Marston on the island of Malta and hence it is sometimes referred to as "Malta Fever" in the literature. However, it was Bruce who recovered the causative bacteria (*Brucella melitensis*) from the spleens of four patients in 1887. Brucellosis is basically a disease of animals such as cattle, swine, sheep and dogs

(kennel-raised), but contagious to humans. Hence, people who are in farming, dairy industry, meat processing, and veterinary surgery are particularly prone to this infection. Until recently only *melitensis* *abortus* and *suis* species of *Brucella* were thought to be infectious to humans. Recently, however, there have been several well-documented cases of *Brucella canis* reported in humans.<sup>1, 2</sup>

The mode of infection may be through contamination of conjunctivae or skin abrasions. Other possible portals of entry include nasopharynx, gut, and genital tract. The *Brucella* organisms have a propensity to invade the reticuloendothelial system of liver, spleen and bone marrow, wherein they multiply and cause granulomatous lesions — usually of the non-caseating type. *Brucella suis*, however, has been noted to cause caseating granuloma and multiple abscesses in liver, bone marrow, and other organs.

Incubation period of this disease varies from a few weeks to a few months. Acute brucellosis presents with malaise, chills, weakness, and anorexia. Weight loss is present in 50 per cent of patients; while fever (range 38-40C) was noted in 95 per cent of cases.<sup>3</sup> Diagnosis of brucellosis rests primarily on serological evidence such as agglutination titers. Usually the titer is more than 1:100 in acute cases, often rising further with a subsequent fall as noted in our patient. One must be aware of false negative agglutination tests because of prozone phenomenon due to blocking IgA antibody. A false-positive test may result from cross reaction with tularemia antigen and at times secondary to recent cholera vaccination.<sup>4</sup> With the recent introduction of radioimmunoassay of IgM, IgG and IgA *Brucella*

(Continued on page 13)



## Current COMMENT

H. B. LINDSLEY, M.D., *Editor*

### *Digitalis: Non-Cardiac Manifestations of Toxicity*

MARK CARLSON, M.D. and WILLIAM NELSON, M.D.,\* *Kansas City, Kansas*

THERAPEUTIC BENEFITS of digitalis were first described by William Withering more than 200 years ago. This drug continues to be used in treatment of congestive heart failure and the majority of supraventricular dysrhythmias. Digitalis intoxication, although recognized and carefully described by Withering, continues to occur in 8-23 per cent of hospitalized patients taking the drug.<sup>1-4</sup>

The incidence of toxicity has increased dramatically during the last 40 years, probably due to increased life span and increased use of potent diuretics. The mortality rate for intoxicated patients in seven published studies varied between 7 and 50 per cent, averaging 22 per cent.<sup>2</sup> The magnitude of the problem is revealed by the fact that digitalis ranks first or second among all drugs prescribed through the Kansas Medicare program.

Digitalis intoxication may be manifested by cardiovascular, gastrointestinal, neurological, and visual signs or symptoms. Although many papers have been written about electrocardiographic diagnosis, at least 20 per cent of intoxicated patients have no electrocardiographic evidence of digitalis excess.<sup>4</sup>

Although the assay of serum digoxin levels has proven useful in selected patients, particularly in elderly persons with decreased skeletal muscle mass and in those with diminished renal function, it is well established that overt digitalis toxicity can be present when the blood level of the drug is within therapeutic range. Thus a measurement within this range should

not preclude consideration of digitalis toxicity as a possible cause of these extracardiac manifestations.

An important report of digitalis-induced toxic manifestations appeared in 1970<sup>5</sup> but did not receive wide attention. The authors recounted the presenting signs and symptoms of 179 patients accidentally overdosed with digitoxin due to an error in formulation of tablets. *Table I* details the adverse extracardiac manifestations and the incidence of their occurrence.

#### Visual Manifestations

Visual symptoms of digitalis intoxication are reported in about 10 per cent of intoxicated patients;<sup>3</sup> however, Lely and Van Enter<sup>5</sup> found 95 per cent of their patients had visual complaints. This high incidence may have been due to the duration and magnitude of intoxication in the study group.

TABLE I\*  
NONCARDIAC MANIFESTATIONS OF  
DIGITALIS TOXICITY

<i>Symptoms/Signs</i>	<i>% Incidence</i>
Fatigue	95
Visual complaints	95
Muscular weakness	82
Nausea	81
Psychiatric complaints	65
Abdominal pains	65
Dizziness	59
Headache	45
Diarrhea	41
Vomiting	40

\* Modified from Reference 5.

\* Professor of Medicine, UKSM-KC.

Address reprint requests to Dr. Nelson, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.



Visual symptoms are among the most specific of the extracardiac signs of digitalis intoxication. Patients report blurred, hazy vision or difficulty in reading. Brightly colored balls, rings, and flames may appear in the visual field. Scotomata, diplopia, and amblyopia have also been described.<sup>5, 6</sup> Most of these patients have a disturbance of red-green color vision, and clinical examination reveals retrobulbar neuritis.<sup>1</sup>

### Psychiatric Manifestations

Psychiatric manifestations of intoxication were first described in 1874.<sup>7</sup> The involvement of the central nervous system was recognized by Withering as early as 1785.<sup>6</sup> Early reports frequently confuse the direct central nervous system effects of digitalis with those due to cerebral vascular insufficiency.

The incidence of psychiatric symptoms in the affected population is not clear. Few investigators address this aspect of digitalis intoxication.

In the study by Lely and Van Enter,<sup>5</sup> 65 per cent of intoxicated patients manifested psychiatric disturbances. These included restlessness, nervousness, agitation, listlessness, drowsiness, fainting, nightmares, loss of memory, aphasia, and confusion. Delirium is occasionally seen and probably indicates severe intoxication. It is characterized by incoherent thinking, disturbed orientation, difficulty in comprehension, illusions, hallucinations, delusional thoughts, irritability, distractability, and labile mood.

Psychiatric disturbances may be the only sign of digitalis intoxication and may occur in the absence of hypoxia, electrolyte abnormalities, or the simultaneous administration of psychotropic drugs.<sup>7</sup> These symptoms occur more frequently in the elderly and in patients with underlying psychiatric illness. Psychiatric symptoms are more specific than gastrointestinal manifestations<sup>2</sup> and are equally important since they may also precede lethal arrhythmias.

### Neuromuscular Manifestations

Weakness and fatigue are often reported by digitalis intoxicated patients. Fatigue is often an early sign and can be acute in onset. Patients in the study of Lely and Van Enter<sup>5</sup> described "a deadly tiredness" and "most terrible feeling."

Reported neurologic side effects of digitalis intoxication include vertigo, headaches, epileptiform convulsions, stupor, coma, and neuralgia.<sup>6</sup> Neuralgic pain occurs in up to 9 per cent of patients receiving toxic doses of digitalis. Pain may occur in the lumbar region or the posterior thigh region, but a

syndrome simulating idiopathic trigeminal neuralgia has been described. It is characterized by a dull aching in the teeth or a sharp stabbing pain in the mandible and maxilla.<sup>8</sup> Trigeminal neuralgia secondary to digitalis intoxication is distinguished from the idiopathic type by the simultaneous occurrence of pain in the first and third divisions of the fifth cranial nerve, by the lack of trigger points, and by the presence of hyperalgesia between attacks.<sup>9</sup> Neuralgic pain is regarded by some authors to be among the more specific noncardiac signs of digitalis intoxication. Others view neuralgia as a coincidental occurrence, unrelated to digitalis.

### Gastrointestinal Manifestations

The incidence of gastrointestinal symptoms in digitalis intoxicated patients is between 33 and 80 per cent. Gastrointestinal side effects may be caused by direct irritation of central nervous system chemoreceptors rather than by local action on the gut.<sup>1</sup> Common gastrointestinal complaints include anorexia, nausea, vomiting, and less frequently, diarrhea.<sup>5</sup>

Anorexia may be an early sign of digitalis intoxication and is frequently followed by nausea and vomiting if the drug is not withheld. Anorexia associated with digitalis toxicity is often of a peculiar variety; the patient may hungrily await a meal, only to lose appetite at the sight of food.

Abdominal pain associated with a tight bloated feeling is a manifestation sometimes overlooked.<sup>5</sup> A recent report suggests dysphagia may be added to the list of intoxication symptoms.<sup>10</sup>

Gastrointestinal complaints are nonspecific signs. In one study, anorexia was the only gastrointestinal symptom more common in toxic than nontoxic patients taking digitalis.<sup>2</sup> Gastrointestinal symptoms are important, since they may precede potentially lethal arrhythmias.

### Non-Toxic Hormonal Effects

Gynecomastia in men taking digitalis was first reported by LeWinn.<sup>10</sup> The clinical presentation includes pain associated with disk-like swelling behind one or both nipples. Digitalis is chemically a steroid, and metabolic alterations can transform it to estrogen-like substances, providing stimulation of the breast tissue. Gynecomastia probably represents a long term digitalis effect rather than intoxication since many patients show no other ill effects.<sup>4</sup>

Similarly, digitalis causes increased maturation (cornification) of the squamous epithelium of the vagina in women taking digitalis for longer than two

years.<sup>11</sup> As with gynecomastia, squamous cornification of the vagina probably represents a long-term digitalis effect rather than intoxication.

## Summary

Many noncardiac manifestations of digitalis intoxication are nonspecific. Vague complaints of weakness and nausea in a chronically ill patient may be difficult to interpret. Visual complaints and psychiatric symptoms, particularly in patients who have not experienced them before, are more specific indicators. All of these complaints may be early symptoms of digitalis intoxication. Attention to such symptoms may prevent disability or life-threatening dysrhythmias.

## Self Assessment Questions

One or more answers may be correct.

1. Gastrointestinal side effects of digitalis intoxication include which of the following?
  - a. Anorexia
  - b. Nausea
  - c. Vomiting
  - d. Abdominal pain
  - e. Hematemesis
2. Cardiac manifestations of digitalis intoxication always occur with noncardiac manifestations of intoxication. (T or F)
3. Which of the following is the most specific noncardiac indicator of digitalis intoxication?
  - a. Visual symptoms
  - b. Gastrointestinal symptoms
  - c. Psychiatric symptoms
  - d. Genitourinary symptoms
4. Gynecomastia probably represents:
  - a. Digitalis effect
  - b. Digitalis intoxication
  - c. Subtherapeutic level of digitalis
  - d. Estrogen-like end products of digitalis metabolism
5. Digitalis intoxication occurs:
  - a. More frequently than 40 years ago.
  - b. Less frequently than 40 years ago.
  - c. With the same frequency that it occurred 40 years ago.

(Answers on page 37)

## Brucella Abortus Septicemia

(Continued from page 10)

antibodies, which appears to be a more sensitive test, the diagnosis of acute cases of brucellosis may be made with more reliability and ease.<sup>5</sup>

Specific antimicrobial therapy which includes streptomycin and tetracycline is the cornerstone in the management of acute cases of brucellosis. Tetracycline is usually prescribed in a dosage of 20 mg/kg/day for three to four weeks. Streptomycin is often added to the regime in seriously ill patients (15-30 mg/kg/day) for a period of two to three weeks.<sup>4</sup> Fever, delirium, and shock have been reported to occur following antibiotic therapy. These Jarish-Herxheimer reactions could be prevented by simultaneous administration of steroids during the first few days of therapy.

Prognosis in acute Brucella infections is usually good with a mortality rate of less than 3 per cent even in the pre-antibiotic era. However, complications occur in 10-15 per cent of cases and these include meningoencephalitis, arachnoiditis, subacute hepatitis with subsequent portal cirrhosis, osteomyelitis, and endocarditis,<sup>6</sup> the latter being the most frequent cause of mortality. The relapse rate and the occurrence of complications tend to be higher in untreated or inadequately treated patients. Thus, in order to prevent unnecessary morbidity and mortality, brucellosis as a possible cause of fever of unknown origin should be kept in mind particularly when the occupational history is highly suggestive as in this patient.

## References

1. Fox, M. D. and Kaufmann, A. F.: Brucellosis in the United States, 1965-1974. *J. Infect. Dis.* 136:312-316, 1977.
2. Ankenship, R. B. and Sanford, J. P.: Brucella canis — A cause of undulant fever. *Am. J. Med.* 59:424-429, 1975.
3. Buchanan, T. M.; Faber, L. C. and Feldman, B. A.: Brucellosis in the United States, 1960-1972. *Medicine* 53:403-426, 1974.
4. Hall, W. H. and Khan, M. Y.: *Brucellosis in Infectious Diseases*, 2nd edition (Hoeprich, Paul D., ed.). Hagerstown, MD, Harper & Row, 1977.
5. Pratt, D.; Nielsen, K. H.; White, R. G. and Payne, D. J. H.: Radioimmunoassay of IgM, IgG and IgA Brucella antibodies. *Lancet* 1:1075-1078, 1977.
6. Pratt, S. D.; Tenney, J. H.; Bjork, C. M. and Reller, L. B.: Successful treatment of Brucella melitensis endocarditis. *Am. J. Med.* 64:897-900, 1978.



# Abstracts

*Presented at the 1980 Annual Meeting, Kansas Chapter, American College of Physicians*

## ALLERGY

### Suppressor Cell Dysfunction in Insulin Dependent Diabetes

Richard S. Fairchild, M.D.; Joseph L. Kyner, M.D. and N. I. Abdou, M.D., UKSM-KC

Considerable evidence has accumulated to indicate that insulin-dependent diabetes (IDD) is in part an immune mediated disorder. Because of the association of certain autoimmune diseases with suppressor cell (SC) dysfunction, nonspecific and specific *in vitro* SC function was evaluated in six patients with IDD and six normal controls. Nonspecific SC was evaluated by its activation with 100  $\mu$ g guinea pig islet cell homogenate (experimental cultures) or splenic cell homogenate (control cultures). Specific SC function was scored by dividing the rate of cell proliferation for islet cell homogenate activated cultures by the rate of cell proliferation for splenic cell homogenate activated cultures. Cell proliferation was measured by  $^3\text{H}$ -thymidine incorporation. IDD nonspecific SC-function was less efficient than controls ( $p < 0.02$ ). IDD specific SC activity also was less efficient; IDD group:  $1.01 \pm 0.19$  (no suppression) and control group:  $0.78 \pm 0.23$  (22% suppression). The SC function in IDD did not correlate with the level of circulating immune complexes, insulin binding capacity, or the presence or absence of human cytoplasmic islet cell or antithyroglobulin antibodies. The two IDD patients tested with disease duration  $>$  five years had no evidence of specific SC dysfunction, indicating that specific SC dysfunction may be an early transient event. Whether SC abnormality in IDD is primary or secondary to the diabetic state is unknown. SC dysfunction in IDD may lead to expansion of specific  $\beta$  cell clones directed against islet cells and could play a role in the pathogenesis of IDD.

## ENDOCRINOLOGY AND METABOLISM

### An Outpatient Endocrine Evaluation of Menstrual Dysfunction

Paul Reith, M.D. and Raymond Schwegler, M.D., UKSM-KC

We evaluated 30 college women with oligo-amenorrhea, pregnancy excluded by a urinary HCG, for hormonal patterns. Tests included an oral progesterone withdrawal test (OPWT), using Provera, 10 mg/day for five days. An AM blood test followed for LH, FSH, total testosterone (T), prolactin (PRL), and a T4 and/or TSH on pooled serum from three drawings, 15 min apart. PRL and all assays were done in 14; PRL and selected tests in the rest.

We found a polycystic ovary pattern in 13 (43%), with either an increased T, increased LH/FSH ratio or an LH  $>$  30 mIU/ml, an a normal PRL. The OPWT was positive, with a withdrawal flow, in 80 percent. Laparoscopy found Stein-Levinthal ovaries in three.

A hyper-prolactin group was composed of eight (27%), two having higher PRLs, and LH/FSH ratio  $<$  1, a normal or increased T, and evidence of microadenomas on tomography of the sella. The other six are unique with mildly elevated PRLs, an increased LH/FSH ratio, and positive OPWTs. We plan tomography and a TRF test for PRL reserve in this subgroup of a mixed hyperprolactin and polycystic ovary pattern. A TSH was normal in all eight.

Eight (27%) were labeled hypothalamic-pituitary dysfunction, having normal baseline hormonal values. The OPWT was

positive in 40 per cent of this group of thinner women. A 46-year-old student had an increased FSH and was classified as primary ovarian failure. None of the 30 were hypothyroid.

Women with menstrual dysfunction can be rapidly screened for hormonal abnormalities with the above outpatient tests. We especially recommend a PRL in all women with oligo/amenorrhea.

### Immunoregulation Abnormalities in Familial Addison's Disease

Richard S. Fairchild, M.D.; N. I. Abdou, M.D. and R. Neil Schimke, M.D., UKSM-KC

Autoimmunity is of paramount importance in idiopathic Addison's disease. The disease also may be familial. Three brothers, two with Addison's disease, and a discordant monozygous twin were evaluated immunologically. None had clinical evidence of other autoimmune endocrine disease. However, the twins had high anti-thyroglobulin and weakly positive anti-parietal cell antibodies. The Addisonian siblings had human cytoplasmic anti-islet cell antibodies. Antiadrenal cortical antibody was negative. Although blood T lymphocyte number was normal,  $\beta$  cells were distinctly higher in the Addisonian siblings. Because of recent reports indicating abnormal suppressor cell (SC) function in autoimmune endocrine disorders — including insulin-dependent diabetes, Hashimoto's thyroiditis, and Graves' disease — nonspecific SC function was evaluated in all three siblings using concanavalin-A SC activation and coculturing with phytohemagglutinin (T cell target) and pokeweed mitogen ( $\beta$  cell target) stimulated blood lymphocytes. Response was measured by the rate of cell proliferation and IgG biosynthesis, respectively. Results indicated that SC function was less efficient in the affected than unaffected twin to either a T cell or  $\beta$  cell target. The other Addisonian brother also showed SC dysfunction.

In conclusion: (1) Autoimmune Addison's disease (AAD) may be familial and discordant in monozygous twins; (2) AAD may occur in association with clinical or subclinical evidence of other autoimmune endocrine diseases; (3) Immunoregulatory dysfunction may play a role in the pathogenesis of AAD and production of various associated autoantibodies; and (4) The factor(s) responsible for variable phenotypic expression of abnormal immunoregulation in monozygous twins is unknown.

### Diabetes and Gastric Bezoars

Bradd J. Silver, M.D.; Joseph L. Kyner, M.D.; Barbara P. Lukert, M.D. and Robert E. Bolinger, M.D., UKSM-KC

Alterations in gastric motility and function are common and well documented in patients with complicated diabetes mellitus. However, gastric bezoar has been reported only sporadically in association with diabetes. The largest number were three cases with diabetes out of 12 patients with bezoars reported by Brady in 1978. During the first six months of 1979, we found three difficult to control, insulin-dependent diabetics to have gastric bezoars on upper gastrointestinal endoscopy. None of the three patients had prior gastric surgery. Endoscopy was performed in these patients for evaluation of severe diarrhea in two and unexplained iron-deficiency anemia and weight loss in the third. All three patients had documented diabetic-type peripheral neuropathy, but only two had evidence of autonomic neuropathy with orthostatic hypotension. All three patients had prior barium studies which failed to reveal bezoar presence. Although Brady suggested delayed gastric emptying as a cause for the bezoars in his diabetics, two of our three patients had normal gastric emptying by a radiolabeled meal.

All three patients had gastric lavage performed to break up the bezoar at the time of endoscopy, and two had repeat endoscopy which confirmed bezoar absence.



Gastric bezoars are extremely variable in clinical presentation, but can cause irritation, ulceration, and significant bleeding. They could also interfere with control of diabetes due to mechanical obstruction of gastric emptying. The subsequent metabolic control in our three patients therefore will be of interest following bezoar resolution.

Diagnosis of gastric bezoar should be considered in diabetics with unexplained gastrointestinal symptoms.

## GASTROENTEROLOGY

### Diagnosis of Angiodysplasia by Colonoscopy

Robert C. Hagan, M.D. and Richard M. Skibba, M.D.,  
Wesley Medical Center, Wichita

Gastrointestinal bleeding of obscure origin is frequently a difficult clinical problem. Often patients are subjected to blind resections when an obvious site of bleeding is not found.

Angiodysplasia of the colon has in recent years been incriminated with increasing frequency as a cause of both acute and chronic gastrointestinal blood loss. In this paper we will discuss three patients who had chronic gastrointestinal blood loss with no cause found using customary diagnostic methods. In all three patients the diagnosis was made by colonoscopy and proved pathologically to be due to angiodysplasia. In two patients the treatment was right hemicolectomy and in the third patient colonoscopic cauterization with the "hot" biopsy forceps was employed.

Angiodysplasia is a disorder that needs to be kept in mind when dealing with gastrointestinal blood loss of unknown origin.

### Campylobacter Enteritis

Michael Cannon, M.D. and Richard Skibba, M.D.,  
Wesley Medical Center, Wichita

The purpose of this study is to describe the clinical manifestations, the proctoscopic appearance and the epidemiology of campylobacter enteritis, and to make the clinician aware of another cause of infectious — often bloody — diarrhea.

Fourteen patients with positive stool cultures for campylobacter were identified from the hospital records of six patients, and clinic or emergency room records of eight patients; their records were reviewed for clinical manifestations, proctosigmoidoscopic findings, culture results, laboratory data, and treatment. When possible, patients or their physicians were contacted for follow-up.

The ages of those afflicted ranged from 6 mos to 56 yrs. There were five males and nine females. All were white excepting one black patient. The duration of illness ranged from two days to three weeks. Eight patients had fever and five vomiting. Thirteen had diarrhea, and eight of those had grossly bloody stools. All had stool cultures positive for campylobacter. Five patients had proctoscopic examination that revealed either normal mucosa or erythema and edema. Treatment was mainly symptomatic. One patient received Keflin and one Ampicillin.

Campylobacter enteritis should be added to the differential diagnosis for bloody diarrhea. The illness is characterized by normal or mildly elevated white blood counts, fever, nausea, vomiting, diarrhea (often bloody), and normal or nonspecific proctosigmoidoscopic findings of mucosal erythema and edema. The usual duration of the illness is two to six days, but may be longer in an occasional patient than previously thought.

### Angiodysplasia Involving the Gastroduodenum: Another Cause of Unexplained Gastrointestinal Bleeding

Robert L. Ricci, M.D. and James L. Hartje, M.D., UKSM-KC

Angiodysplasia of the colon is now recognized as a common cause of bleeding in the elderly. Similar lesions may involve the

upper gastrointestinal (GI) tract. Three patients with angiodysplasia involving the stomach and duodenum are presented. All share several clinical features, including: (1) advanced age; (2) iron deficiency anemia; (3) heme positive stools; and (4) non-diagnostic x-ray studies. Two patients had murmurs related to aortic valve disease; this has been associated with chronic GI blood loss.

Multiple vascular ectasias, measuring 2-6 mm in size, were identified endoscopically and involved all regions of the stomach as well as the duodenal bulb. Active bleeding from an angiodysplastic lesion was clearly demonstrated in one case. Pathologic material in another case revealed an increased number of dilated vessels just inferior to a single layer of gastric mucosa. The close proximity of the vascular lesion and gastric mucosa suggests that minimal mucosal damage would result in GI bleeding. Endoscopic electrocoagulation was safely used in two cases with minimal secondary bleeding. Short term follow-up suggests that this therapy is effective in diminishing recurrent episodes of bleeding.

In summary, angiodysplasia: (1) involves the gastro-duodenum; (2) is an acquired vascular lesion, probably associated with advancing age; (3) can be readily diagnosed by upper endoscopy; (4) can explain chronic GI blood loss; and (5) may be safely and effectively treated with endoscopically-directed electrocoagulation.

### Chronic Gastrointestinal Bleeding from Ileal Varices Following Proctocolectomy of Ulcerative Colitis: Correction by Mesocaval Shunt

Robert L. Ricci, M.D.; K. R. Lee, M.D. and  
Norton J. Greenberger, M.D., UKSM-KC

A 48-year-old woman presented with multiple episodes of recurrent bleeding per ileostomy, beginning six weeks after proctocolectomy for chronic ulcerative colitis. A bleeding site was not identified, despite upper endoscopy, ileoscopy, arteriography, and exploratory laparotomy. There were no esophageal or gastric varices. She was managed with blood transfusions and iron replacement. Significantly, she was also known to have chronic active hepatitis and cirrhosis, controlled with Prednisone, 30 mg/day. She was admitted to our hospital during an acute episode of bleeding.

Emergency mesenteric arteriography with delayed venous filling phase revealed: (1) portal hypertension; (2) a large collection of ileal varicosities near the ileal stoma; (3) an enlarged deep ileocircumflex anastomotic venous collateral; and (4) a dilated right inferior epigastric vein. Portal systemic shunt using a Drapanas end-to-side mesocaval H-graft was performed. The superior mesenteric venous pressure decreased from 16 to 7 mm Hg, while the inferior vena cava pressure increased from 3 to 5 mm Hg. The patient recovered without incident, and has had no recurrent bleeding for 18 months.

This case clearly demonstrates that with portal hypertension, varices can develop in unusual locations, and can be a source of gastrointestinal bleeding that defies identification with standard techniques. Selective angiography is an important diagnostic tool. As in our case, shunting is likely to be effective in abolishing troublesome, recurrent hemorrhage.

## GENETICS

### Hepatolenticular Degeneration: Presentation of a Family and a Review of the Disease

Garold O. Minns, M.D.; Joe J. Lin, M.D.; George J. Mastio, M.D.  
and Douglas W. Voth, M.D., UKSM-Wichita

Hepatolenticular degeneration (HD) is a rare disorder caused by an inherited impairment in copper metabolism resulting in copper deposition in many different organs. The clinical man-



ifestations are often non-specific and reflect dysfunction of hepatic, neurologic, renal, and hemopoietic systems due to cellular toxicity of copper. The disorder may easily be misdiagnosed, even when all of the classic manifestations are present. Occasionally patients may present with only signs of hepatic injury; in such situations, making the correct diagnosis is even less likely. Early recognition of this disease by physicians is critical to family members who may have derangements of copper metabolism. Untreated HD is virtually always fatal whereas proper treatment can often reverse the organ dysfunction caused by excess copper.

We present a family in which HD was diagnosed in two sisters, ages 15 and 4 years, following appearance of cirrhosis, hepatic failure, and death in the older sibling. This family study demonstrates the seriousness of this disorder and the potential for successful treatment. Copper excretions, and tissue and serum analyses before and during treatment will be presented; these studies corroborated the clinical and histologic features observed. Electron microscopy of the liver biopsies will also be shown. A review of the disorder, useful diagnostic tests, and methods of treatment will be presented.

## HEART, CIRCULATION

### Tetracycline in the Management of Malignant Pericardial Effusion: A Case Report

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Various chemotherapeutic agents have been used effectively in the treatment of pericardial effusion. Although tetracycline has been used in the management of malignant pleural effusion, its efficacy in the management of malignant pericardial effusion has been reported only once. We report a case of malignant pericardial effusion due to lung cancer treated with instillation of tetracycline in the pericardium. A 62-year-old male was admitted with chief complaint of increasing shortness of breath for three weeks duration. Chest x-ray showed enlarged cardiac shadow and a mass in the right lung. Echocardiogram revealed massive pericardial effusion. Pericardial aspiration revealed hemorrhagic effusion with malignant cells. After removing 1150 cc of fluid, 500 mg of tetracycline was instilled in the pericardial cavity. Subsequent to this, there was no accumulation of pericardial fluid by x-ray and ECHO; however, he developed right pleural effusion which showed malignant cells. His condition rapidly deteriorated and he died four weeks after therapy. An autopsy revealed no pericardial effusion. We conclude that tetracycline is effective in the management of malignant pericardial effusion but further studies are needed to evaluate long-term adverse effects.

### Pancytopenia with Mixed Cryoglobulinemia (CRYO): Evidence for Anti Stem Cell (SC) Activity of Cryoglobulin-effects of Plasmapheresis (PL)

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A 66-year-old white male with IgG-M mixed CRYO, purpura, vasculitis, and nephritis was treated for six years with Azathioprine (AZ) to control his disease. During the terminal four months of his illness, he developed pancytopenia, which did not respond to adding steroids and stopping AZ. He was then treated with PL. Cryoglobulin levels decreased from 7.0 per cent to 0.5 per cent and mean absolute PMN counts increased from  $1,010/\text{mm}^3$  to  $2,355/\text{mm}^3$  after PL.

The mechanism responsible for pancytopenia was studied. SC was evaluated by culturing bone marrow in the colony forming unit (CFU-C) assay and cellular or humoral suppressor mechanisms were studied. Compared to normal controls, the patient's

marrow had fewer CFU-C: patient 27, normal  $49 \text{ CFU-C}/2 \times 10^5$  marrow cells. The patient's marrow did not suppress normal marrow when cocultured together. The patient's plasma, however, completely inhibited normal CFU-C. The plasma inhibitory factor was absorbed out by normal bone marrow, but not by normal platelets indicating its anti-SC activity and not anti-HLA activity. Depletion of cryoglobulin from the patient's plasma eliminated its anti-SC activity. Mixed CRYO could have anti-SC activity and induce pancytopenia *in vivo*. PL, particularly if followed by cytotoxic therapy, could be beneficial in depleting the cryoglobulin and reversing the pancytopenia. *In vitro* CFU-C testing of marrow from pancytopenic patients could be helpful in clarifying pathogenetic mechanisms and could give guides to effective therapy.

### Heparin-Induced Cutaneous Vasculitis

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A patient with previous exposure to heparin developed localized cutaneous necrosis at the sites of subsequent subcutaneous heparin administration. Heparin was discontinued and resolution of the lesions occurred. Assessment of the patient's serum and/or plasma obtained serially during the height of cutaneous necrosis and in the period of resolution failed to demonstrate evidence of immune complexes by Clq binding. There was no evidence of circulating antibody to heparin by the indirect hemagglutination technique. The plasma CH50 levels were low at the time of the reaction and progressively increased in titer with clearance of the lesions. Although thrombocytopenia was not noted, plasma obtained at the time of cutaneous necrosis contained a platelet stimulatory activity which was not present when the lesion resolved. Immunofluorescent studies of the biopsied lesion demonstrated deposition of IgM and C3 in the cutaneous vessels. Therefore, the subcutaneous administration of heparin is capable of initiating a severe vasculitis with subsequent necrosis associated with immunoglobulin and complement deposition. The mechanism of this reaction has not been fully characterized.

### Encainide Therapy in Patients with Drug Resistant Ventricular Tachycardia

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Encainide (En), a new antiarrhythmic agent, was tested in 39 patients (pts) with chronic recurrent ventricular tachycardia (VT) or ventricular fibrillation (VF). All pts were intolerant of, or resistant to, conventional antiarrhythmic agents. Ages ranged from 27-78 yrs (mean 51 yrs) with diagnoses of ischemic heart disease in 22, cardiomyopathy in 13, mitral valve prolapse in three, and hypertensive heart disease in one. En was administered orally every 4-6 hr in doses of 25-50 mg. In 20 pts VT was present on control 24-hr ECG recording while 17 pts had frequent or sustained VT that precluded 24-hr control study, and two pts with recurrent VT-VF but no VT during control period required electrophysiologic (EP) study for initiation of VT. Recurrent VT occurred in 19 pts during acute therapy with En. En was discontinued in one pt because of side effects. In 19 pts no VT was detected by 24-hr ECG recording during acute therapy. EP study in six of 19 pts, however, reproduced VT in five pts. Acute En therapy was thereby judged effective in 14 pts. Long-term En therapy has been discontinued in five of 14 pts due to death in two pts (1 sudden), second degree AV block in one pt and recurrent, late VT in two. En has been combined with propranolol and amiodarone in one pt. En therapy was associated with increased PR interval 19 per cent (mean) and QRS



interval 31 per cent (mean) ( $p < 0.05$ ). Side effects were minimal. In conclusion, En appears to be a well-tolerated, effective anti-arrhythmic agent in some pts with recurrent, drug resistant VT.

### **Difficulty of Diagnosis of Digitalis Intoxication During Atrial Fibrillation**

John Newcome, M.D. and William P. Nelson, M.D., UKSM-KC

Digitalis intoxication may be readily recognized if a patient presents with classic symptoms or signs of overdosage. Similarly a group of cardiac arrhythmias may serve to provide an alert that a toxic level of the drug has been reached. There is a variety of dysrhythmias due to disturbed electrical impulse formation (e.g., sinus bradycardia) or electrical impulse conduction (e.g., variable degree of AV block). A listing of anticipated common digitoxic arrhythmias can be formulated when a patient is in sinus rhythm.

However, when atrial fibrillation is present, the recognition of digitalis-induced arrhythmias is more difficult, and only a limited variety may be present. The recognition of this limitation is important. The arrhythmias that should alert the clinician to the possibility of digitalis excess include the following:

1. Advanced degree of AV nodal block indicated by an escape rhythm (junctional or ventricular pacemaker)
2. Accelerated junctional rhythm
3. Accelerated ventricular rhythm
4. Uniform ventricular premature contractions
5. Multifocal ventricular premature contractions

Examples illustrating these mechanisms will be presented.

### **Clinical Evaluation of a New Oral Antihypertensive: Guanadrel Sulfate**

John L. Dunlap, M.D. and Marvin I. Dunn, M.D., UKSM-KC

This study was designed to test the efficacy of guanadrel sulfate (Hylorel), an oral antihypertensive, and to determine the frequency of side effects. After a screening period, the dosage was adjusted during about six weeks until blood pressure (BP) was controlled (supine BP 140/85 mmHg or less up to 40 yrs of age, or 150/90 mmHg or less in those over 40 yrs). There were 199 patients (132 males, 67 females) in this multicenter trial, all of whom had uncontrolled BP at onset of the trial. All received hydrochlorothiazide in addition to guanadrel. Within two weeks, mean BP had approached normal levels, and pressures had stabilized by week five. Mean supine BP dropped from 162.2/104.0 to 145.6/90.6 mmHg. Mean standing BP dropped from 157.3/103.4 to 132.1/86.2 mmHg. Investigators judged control as good in 66 per cent, fair in 19 per cent, and poor in 15 per cent of the patients. Mean daily doses of 55 mg guanadrel produced these results. Guanadrel dosage varied widely, demonstrating that it must be adjusted for each patient. Guanadrel's effects on BP and pulse rate after exercise were not appreciably different from its effects on standing and resting BP and pulse rate. The incidence of side effects was consistent with other studies in the guanadrel development. No clinically significant laboratory abnormalities were observed. Except for BP measurements, cardiac, cerebral and renal assessments of hypertension severity did not change.

### **Cryofibrinogenemia Associated With Arterial and Venous Thrombosis in Two Families**

Thomas H. Simmons, M.D.; Leo P. Cawley, M.D.; Ernest W. Crow, M.D. and Kenneth W. Hollis, M.D., UKSM-Wichita

Cryofibrinogenemia is a pathologic condition where fibrin, fibrinogen, and fibronectin form a cold insoluble precipitate in plasma. Fibronectin, a normal plasma glycoprotein, may be elevated in certain pathologic conditions, chiefly thromboem-

bolism. In two families, only those members (two of five and two of four) with cryofibrinogen manifested thromboembolic disease. The most severe case is an otherwise healthy young woman who required above-the-knee amputation because of thrombosis of major arteries. She has had no further clinically-apparent thromboses during nine months of aspirin therapy. Another case is a young man with severe thrombophlebitis of the left leg. During six months of warfarin therapy, he has done well.

Cryofibrinogenemia may represent one form of "hypercoagulable" state. It can be easily diagnosed and may be a contraindication to certain drug use. Under certain conditions, prophylactic anticoagulation may be indicated.

### **Diagnosis of Pericardial Effusion by Computed Tomography**

Bert W. Y. Wong, M.D.; Kyo R. Lee, M.D. and Richard I. MacArthur, M.D., UKSM-KC

We assessed the diagnostic capability of computed tomography (CT) for detecting pericardial effusion in a dog model in which the amount and type of pericardial fluid were controlled and in patients with suspected pericardial effusion prior to pericardiocentesis. Twelve CT studies of the chest were obtained in six dogs with variable amounts (50-600 ml) of pericardial fluid (50% dextran, normal saline, or heparinized whole blood). The results showed that pericardial fluid composed of 50 per cent dextran and/or normal saline was detected by CT in all studies, even in amounts as small as 50-100 ml. Hemopericardium, however, was isodense with the heart but could be detected by intravenous contrast enhancement of the heart. CT clearly demonstrated the presence of pericardial fluid in all three patients studied prior to successful pericardiocentesis.

We conclude that CT is a sensitive, noninvasive method for the diagnosis of pericardial effusion. Diagnostic difficulties may be encountered with hemopericardium.

### **Idiopathic Aneurysmal Dilatation of the Ascending Aorta, Severe Aortic Regurgitation, and Mitral Valve Prolapse Syndrome**

Chih-Ping Yang, M.D., Veterans Administration Medical Center, Topeka

A 52-year-old male had Marfan habitus. He presented with severe aortic regurgitation (BP 140/50) and mitral valve prolapse syndrome. He had had progressive dyspnea without chest pain for two years. Chest x-ray revealed prominent ascending aorta and left ventricular (LV) enlargement. EKG had a pattern of LV hypertrophy with strain. Echocardiogram revealed dilated aorta and LV internal dimension, hyperdynamic LV posterior wall, fine fluttering of the anterior mitral valve with early closure, and holosystolic prolapse of the posterior mitral valve. Angiogram indicated marked aneurysmal dilatation of the ascending aortic root and severe aortic regurgitation with LV dysfunction (ejection fraction 40%); the cardiac catheterization recorded LV end diastolic pressure of 45 mmHg. Proposed surgery was not accepted by the patient. He was aggressively treated medically. He remained in Class III C for six months and died suddenly from ventricular tachycardia and fibrillation. Necropsy revealed aneurysmal dilatation of the ascending aortic root and dilatation of aortic and mitral rings. Histopathology revealed thickened aortic and mitral valve cusps with collagenous degeneration without calcification. Aortic root revealed collagen degeneration and loss of elastic tissue. There was no myocardial infarct or aortic dissection.

Conclusions: (1) Overall features of this patient were consistent with Formes Frustes Marfan Syndrome; (2) Early closure of the mitral valve could be present in chronic severe aortic regurgitation and suggests consideration of surgical intervention;



(3) Sudden death in Marfan Syndrome could be due to ventricular tachyarrhythmia; and (4) Combination of aortic regurgitation and mitral valve prolapse syndrome is a noteworthy feature.

## HEMATOLOGY

### Plasma Lactoferrin in Hematological Disorders

Joseph D. Verdirame, M.D.; Sean R. Lynch, M.D. and James D. Cook, M.D., UKSM-KC

Lactoferrin, an iron-binding protein secreted in breast milk, is contained in the specific granules of neutrophil leukocytes and is thought to enter the plasma when neutrophils degenerate. We measured plasma lactoferrin in a wide variety of hematological disorders to study its relationship to the circulating neutrophil count and the estimated bone marrow myeloid mass. Lactoferrin was purified from human breast milk by column chromatography and used to develop a sensitive two-site immunoradiometric assay. This method can detect plasma lactoferrin levels of 0.1 ng/ml with a precision of  $\pm 10$  per cent (coefficient of variation). Most consistent results were obtained when samples were kept at 4 C until centrifugation and plasma separated by slow centrifugation to minimize neutrophil destruction. Preliminary results indicate that the plasma lactoferrin/neutrophil ratio is constant in normal controls (range .045-.183 ng/ $10^3$  cells). When neutropenic subjects were studied, a subset with normal or increased myeloid elements in the marrow was identified which had an increased ratio (range .267-.438 ng/ $10^3$  cells). Another group with normal circulating neutrophil counts but low lactoferrin/neutrophil ratios (range 0-.024 ng/ $10^3$  cells) was also identified. This group had myeloid hypoplasia because of bone marrow infiltration with abnormal cells. This suggests that not only circulating neutrophils but also marrow neutrophil precursors contribute to plasma lactoferrin levels. The clinical application of plasma lactoferrin determinations in various hematological disorders will be discussed.

### Correctable Intestinal Defect of Vitamin B<sub>12</sub> Absorption in Pernicious Anemia

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Pernicious anemia (PA) and malabsorption of vitamin B<sub>12</sub> are two major causes of vitamin B<sub>12</sub> deficiency. The Schilling test, with or without intrinsic factor (IF), usually enables the differentiation between these two entities. Patients with PA characteristically show a subnormal absorption of cyanocobalamin-<sup>57</sup>Co which is corrected by addition of IF whereas patients with small intestinal disease have malabsorption of the vitamin even in the presence of IF. In rare cases of PA absorption abnormalities of the small intestine may be induced by vitamin B<sub>12</sub> deficiency and the therapy with vitamin B<sub>12</sub> can restore absorption of vitamin B<sub>12</sub>-IF complex.

*Case Report:* A 59-year-old white male was admitted to the hospital feeling tired and light-headed. He was found to have macrocytic anemia. Schilling test Part I showed less than 1 per cent absorption of cyanocobalamin-<sup>57</sup>Co. The Schilling test Part II, performed four weeks later, revealed 3.3 per cent absorption of cyanocobalamin-<sup>57</sup>Co. There was histamine-fast achlorhydria and elevated serum gastrin concentration. Gastric mucosal biopsy revealed atrophic gastritis. D-Xylose absorption, serum folic acid level, serum vitamin A level, serum protein electrophoresis, upper gastrointestinal series and small bowel series were normal. Gastric parietal cell and IF antibodies were absent in the serum. Following Schilling test Part I, there was good reticulocyte response. Vitamin B<sub>12</sub> therapy was continued with remission of anemia. Repeat Schilling test Part II approximately seven months later revealed 17 per cent absorption of cyanoco-

balamin-<sup>57</sup>Co. However, a repeat Schilling test Part I still revealed less than 1 per cent absorption.

*Conclusions:* (1) Although Schilling test Part I is diagnostic of PA, a subnormal test result does not rule out PA; and (2) Serum autoantibodies to gastric parietal cell and IF are usually present in PA, but may be absent.

### Heterogeneity of Pathogenetic Mechanisms in Aplastic Anemia (AA)

J. Verdirame, M.D.; N. I. Abdou, M.D. and M. Amare, M.D., UKSM-KC

Twenty-one patients with AA, who had been unsuccessfully treated with steroid and/or androgen, were studied. Eighteen were found to be idiopathic, one had systemic lupus erythematosus (SLE), and one had cryoglobulinemia (cryo). Bone marrow (bm) precursors were studied by the colony (CFU-C) assay, and cellular or humoral suppressor mechanisms were noted. Defects in the generation of colony stimulating factor (CSF) were tested. AA had no or few CFU-C: AA = 0-5, normals = 34-57. In two cases of AA, coculturing AA bm with normal bm suppressed the latter. Whereas suppression could be eliminated in vitro in both patients, partial recovery was seen in one patient following antithymocyte globulin (ATG) treatment. In three patients, defective CSF was corrected by treating AA cells with  $10^{-5}$  M carbachol prior to plating. Feeder layers of normals increased CFU-C from  $2 \pm 2$  to  $27 \pm 9$  in the three AA-bm cultures. Thirteen AA patients had no suppressor cells or serum factor and had normal CSF. The patient with SLE had a serum factor that inhibited CFU-C. Plasmapheresis and cyclophosphamide in SLE and cryo improved the blood counts. The majority of AA patients have no apparent immune mechanisms and probably lack stem cells. A minority have (1) suppressor cells partially corrected by ATG; (2) CSF defect corrected by cholinergic antagonists; or (3) humoral factors corrected by plasmapheresis and cytotoxic drugs. CFU-C could clarify pathogenetic mechanisms in AA and provide guides to therapy.

### The Role of Allogenic Bone Marrow Transplantation in the Treatment of Severe Aplastic Anemia

Barry Goldman, M.D.; Mammo Amare, M.D.; Barry Skikne, M.D. and James D. Cook, M.D., UKSM-KC

Conventional treatment of severe aplastic anemia (defined by a PMN count of less than 500, a platelet count of less than 20,000, a reticulocyte count of less than 1 per cent, and a bone marrow cellularity of less than 20 per cent) is unsatisfactory with a median survival of three months from the time of diagnosis. Four patients with severe aplastic anemia (three of unknown cause and one drug induced, all with a duration of four to seven months) were treated with allogenic bone marrow transplantation from HLA-matched sibling donors. Ages ranged from 22-59 years. All four patients were conditioned with Cytosan, 50 mg/kg/day intravenously for two days. Median marrow cell dose was  $3 \times 10^8$  cells/kg. Engraftment was seen in all four within 14-21 days. Two patients died of graft-vs-host disease at 61 and 66 days. One died of graft rejection at 134 days post transplantation, and one patient is alive and well one year following transplantation. Allogenic bone marrow transplantation from sex-matched and HLA-matched sibling donors offers an alternative approach in an otherwise fatal disease. Our one long-term survivor compares favorably to the 40 per cent survival rate seen in larger series, as three of our patients were older than 50 yrs and had strong pretransplant transfusion histories from non-family members. Primary determinants of survival appear to be age below 50 yrs and lack of previous exposure to blood products. Graft-vs-host disease remains a major problem, occurring in up to 60 per cent in some degree.



## IMMUNOLOGY

### A Case Report of Coumadin-Induced Necrosis of the Skin: No Evidence of Immunological Mediation and a Review of the Literature

Larry T. Balentine, M.D.; Douglas Boehm, M.D.; Michael Waxman, M.D. and Frank Mantz, M.D., UKSM-KC

Necrosis and gangrene of the skin has been an infrequently observed adverse effect of bishydroxycoumarin (Dicumerol) and a rare complication of sodium warfarin (Coumadin) therapy. A case of Coumadin-induced necrosis and gangrene of the skin and subcutaneous tissue is described and the pathogenesis discussed. An absence of IgG, IgM, IgA, C3 and fibrinogen deposits in the epidermis, dermal-epidermal interface, and blood vessels was demonstrated by immunofluorescence histochemistry. The mechanism of Coumadin-induced necrosis would not appear to be immunologically mediated.

## INFECTIOUS DISEASES

### Enteroviral Infection of the Central Nervous System: Report of an Epidemic and Unusual Clinical Presentations

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Enteroviral infections are common and often occur in an epidemic fashion. Frequently the presenting syndrome is that of an aseptic meningitis. An epidemic of enteroviral meningitis occurred in Wichita during the summer of 1978. An analysis of charts from two hospitals during this time revealed 65 patients having findings compatible with aseptic meningitis. Echo 4 was the predominant virus isolated. Patients were divided into three groups based on isolation of an enterovirus. Group I (confirmed — 38 patients) patients had an enterovirus isolated from the CSF; Group II (presumptive — 8 patients) patients grew an enterovirus from sites other than the CSF; and Group III (suggestive — 19 patients) patients had no enterovirus isolated, but had a syndrome compatible with aseptic meningitis. Several patients had uncharacteristic illnesses and posed some diagnostic dilemmas. Many were hospitalized for several days and treated with wide-spectrum and potentially toxic antibiotics. One patient had a simultaneous enteroviral and *Rickettsia rickettsii* infection. Five patients had growth of an enterovirus from the cerebrospinal fluid (CSF) but had no leukocytes in the CSF. One of these patients died. Approximately 20 of the aseptic meningitis patients had at least one initial CSF finding suggestive of bacterial meningitis. Thirty-five per cent of the aseptic meningitis patients received antibiotics. This data indicates that benign and self-limited forms of enteroviral infection may present to the physician as bacterial meningitis resulting in the administration of unnecessary antimicrobial therapy.

### Atypical Staphylococcal Scalded Skin Syndrome in an Adult

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A 67-year-old man presented with a two-week history of a rash which was refractory to systemic corticosteroid therapy. Physical examination revealed sloughing skin on his head, arms, and torso with bullae on his hands, soles, and lower extremities. Stroking involved and uninvolved skin produced Nikolsky signs. Cultures of the patient's skin, blood, nose, and throat grew *Staphylococcus aureus*. Nafcillin therapy was initiated by improvement did not occur until corticosteroid dosage was decreased. Skin biopsies revealed the plane of cleavage to be in the

basal epidermal layer which is deeper than that seen with exfoliatin-associated staphylococcal scalded skin syndrome. *S. aureus* isolates from our patient produced an epidermal toxin which caused positive Nikolsky signs in neonatal mice. The toxin caused cleavage in the basal epidermal layer and also differed from exfoliatin in being heat-labile and not neutralized by exfoliatin antitoxin. The new toxin is indistinguishable from the epidermal toxin produced by strains of *S. aureus* isolated from children with the staphylococcal toxic-shock syndrome. Our patient represents an atypical case of staphylococcal scalded skin syndrome associated with a new epidermal toxin which may be associated with a spectrum of clinical manifestations.

### Treatment of Complicated Diverticulitis with Cefoxitin Sodium

Darrel L. Ellis, M.D. and H. C. Goodpasture, M.D., UKSM-Wichita

Cefoxitin sodium is a cephamycin antibiotic closely related to the cephalosporins. Like other  $\beta$ -lactam antibiotics, cefoxitin is a bactericidal drug and its antimicrobial spectrum is similar to that of other cephalosporins. However, unlike other cephalosporins, it has significant in-vitro activity against *Bacteroides fragilis* and is stable in the presence of  $\beta$ -lactamases produced by these organisms.

Diverticulitis is a common disease which can become complicated by microperforation, pericolic cellulitis, and abscess formation. The micro-organisms involved are usually mixed and include the common aerobic gram-negative rods such as *E. coli* and a mixed anaerobic flora frequently including *Bacteroides fragilis*. Although combinations of  $\beta$ -lactam antibiotics and aminoglycosides are commonly used as initial therapy in such infections, these regimens are expensive and lack activity against *Bacteroides fragilis*. The addition of chloramphenicol or clindamycin to provide antimicrobial activity against *Bacteroides fragilis* is effective but may not be necessary in many patients and certainly adds to the expense and potential toxicity of the treatment program.

The in-vitro antimicrobial spectrum of cefoxitin makes it an attractive drug for consideration as a single agent in initial treatment of complicated diverticular disease. We report our experience in using cefoxitin in treating two patients with complicated diverticulitis during the past eight months and will review some recently published clinical and experimental data regarding antimicrobial treatment of intra-abdominal sepsis due to mixed anaerobic bacteria.

### Noncaseating Granulomatous Disease — Sarcoidosis or Sporotrichosis?

Douglas Boehm, M.D.; Joseph M. Lynch, M.D.; Glenn R. Hodges, M.D.; Saing H. Lee, M.D.; John Bellome, D.D.S.; Sharon Snively, M.D. and Nabih I. Abdou, M.D., UKSM-KC and Veterans Administration Medical Center, Kansas City, Missouri

A 50-year-old black man manifested fever, night sweats, weight loss, cough, and cutaneous nodules for one month. Bilateral hilar adenopathy was discovered. Transbronchial biopsy disclosed noncaseating granulomas. A skin nodule biopsy was consistent with erythema nodosum. No organisms were seen in either biopsy. Sarcoidosis was diagnosed and the patient treated with corticosteroids. Although there was initial improvement, the patient's condition worsened with the development of arthritis and a draining skin lesion. These were not responsive to increasing doses of corticosteroids. Synovial tissue biopsy showed noncaseating granulomas; no organisms were seen. Radiologic evidence of osteomyelitis developed in his mandible and extremities. *Sporothrix schenckii* was isolated from mandibular drainage and several cutaneous ulcers. The patient was treated with amphotericin-B. There was subsequent clinical im-



provement. Review of the literature reveals that sporotrichosis has occurred in association with sarcoidosis and that our patient's course is representative. Sporotrichosis is usually discovered after the initial diagnosis of sarcoidosis is established and is manifested by pulmonary, bone, joint, and/or skin lesions which may mimic those of sarcoidosis. Diagnosis is established by positive fungal culture and treatment is with amphotericin-B. Thus, these patients may have had only one disease, sporotrichosis.

### Comparison of Bacteremia Caused by Cell-Wall-Defective and Conventional Organisms

David L. Dworzack, M.D. and E. H. Gerlach, Ph.D.,  
UKSM-Wichita

Cell-wall-defective microorganisms are frequently isolated from clinical cultures. However, the pathogenicity of these variants is usually unclear. The features of cell-wall-defective bacteremia (CWDB) in 111 patients were compared to features of conventional, vegetative bacteremia (VB) in 83 patients. Mean age, sex, frequency, and severity of coexisting illnesses did not differ between patient groups. Thirty-seven per cent of patients with CWDB and 28 per cent of those with VB had malignant neoplasia. Fever ( $>37.8$  C) was the most frequent physical finding in both groups (84%-CWDB, 83%-VB). Leukocytosis ( $>10,000/\text{mm}^3$ ) was observed in 48 per cent of patients with CWDB and 59 per cent of patients with VB, while 19 and 10 per cent respectively were leukopenic ( $<4300/\text{mm}^3$ ). Transfusion of blood products prior to positive cultures occurred in 28 per cent (CWDB) and 27 per cent (VB) of patients. Cell-wall-active antimicrobials were given prior to positive cultures in 43 per cent of patients with CWDB while 29 per cent of patients with VB received such therapy. Mortality was 12 per cent among patients with CWDB and 28 per cent among those with VB. Leukopenia was associated with increased mortality among patients with VB (63% vs 26%) but not among patients with CWDB (10% vs 9%). Among patients with VB, increased mortality (47% vs 22%) occurred when appropriate antimicrobials were not given. This was not observed with CWDB (8% mortality with non-cell-wall-dependent antimicrobials; 15% mortality with other therapy). Patients who develop CWDB appear clinically similar to patients with VB. However, CWDB is associated with lower mortality which does not appear to be influenced by therapy or impaired cellular immunity.

### Legionnaire's Disease (LD) Presenting as Fulminating Respiratory Failure: Case Report

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Topeka

A 47-year-old white male was transferred to the intensive care unit with acute respiratory distress and hyperpyrexia. He had a three-day history of febrile illness with cough for which he received ampicillin. However, his condition became worse with progressive dyspnea, confusion, and obtundation. Examination and chest roentgenograph showed left pneumonitis with temperature, 40.6C; pulse, 100; blood pressure, 95/60; and respiration, 26/min. Laboratory testing showed leukocytosis with left shift, and urinalysis revealed microscopic hematuria. Serum sodium measured 112 mEq/L; phosphate, 1.7; SGOT, 62 mμ/ml; and lactate dehydrogenase, 327. Despite treatment with amikacin and cefoxitin, he continued febrile (39.4-40.6C), and on the third hospital day his pneumonia became panlobar. His  $\text{pO}_2$  fell to 44 mm Hg while he was receiving 100 per cent oxygen. The patient was intubated and started on mechanical ventilatory assistance using PEEP together with other supportive measures. Extensive diagnostic workup, including bacteriologic, viral, mycoplasmal and LD studies, was initiated. Erythromycin was started which resulted in prompt clinical improvement and grad-

ual resolution of pneumonic infiltrate with full recovery. Indirect fluorescent antibody titers to LD bacterium (Serogroup 3) antigen reported by the Center for Disease Control (Atlanta) showed a rise from 64 on May 1 to 1024 on May 16 and  $>1024$  on May 30, indicating recent infection. In conclusion, we report a case of LD which had a fulminant course with acute respiratory distress syndrome and multisystem involvement including hepatic dysfunction, encephalopathy with confusion and obtundation, inappropriate antidiuretic hormone with hyponatremia, hypophosphatemia, and microscopic hematuria. Difficulties in diagnosis of sporadic cases arise from the fact that seroconversion occurs several weeks after onset of illness and isolation or culture are extremely difficult. The clinician must depend on a high index of suspicion in the appropriate setting for prompt, specific, and perhaps lifesaving therapy.

### Infective Endocarditis Due to *Actinobacillus Actinomycetemcomitans*

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M. Dunn, M.D. and C. Liu, M.D., UKSM-KC

Infective endocarditis due to *A. actinomycetemcomitans* is uncommon. We report three such patients seen at UKSM-KC. The patients' ages were 46, 54, and 71 yrs. Two had underlying rheumatic valvular disease; one had an infection in connection with cardiac pacemaker wire. None had recent dental work or invasive procedures. The time from onset of symptoms to diagnosis and treatment ranged from 3-10 mos. All had malaise, fever (to 39 C), chills, and sweats. Two had received oral antibiotics before the cause was known. Splenomegaly and microscopic hematuria were found in all three patients. Blood cultures required up to 21 days to show growth, characteristic of the slow growth of *A. actinomycetemcomitans*.

One patient relapsed one month after initial treatment with cephaloridine and tetracycline. All patients were cured after a six-week course of aminoglycoside (streptomycin or gentamicin) combined with either oxacillin, chloramphenicol, or tetracycline.

Complications related to the disease occurred in one patient who developed aortic insufficiency, but responded to antibiotic therapy without valve replacement. Two patients suffered eighth nerve complications related to aminoglycoside toxicity.

Important clues to diagnosis of *A. actinomycetemcomitans* endocarditis include the following: (1) a high suspicion of endocarditis caused by fastidious pathogens when no growth has been demonstrated on previous blood cultures; (2) allowing blood culture incubation to 21 days or longer; and (3) using special media or culture techniques for uncommon pathogens.

### Case Report: Pulmonary Coccidioidomycosis and Wegener's Granulomatosis in a Patient with Diabetes Mellitus

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UKSM-Wichita

A 29-year-old white male with insulin dependent diabetes mellitus developed pulmonary coccidioidomycosis in 1977, after having resided in Arizona from 1971-1976. At the time of diagnosis, a chest roentgenogram revealed cavitary lesions in both upper lobes, and a complement fixation titer to *Coccidioides immitis* was 1:32. In 1978, hemoptysis and malaise prompted further evaluation and roentgenographic progression of the pulmonary changes was noted. Parenteral amphotericin B was begun in November, 1978. Subsequent bone marrow and liver biopsies and cultures showed no evidence of disseminated mycosis. After four weeks of amphotericin B there was prompt improvement in the systemic symptoms and increased appetite. However, a precipitous rise in serum creatinine occurred. Despite withdrawal of all nephrotoxic agents, serum creatinine



increased to 7.0 mg/dl. A renal biopsy was consistent with, but not diagnostic of, Wegener's granulomatosis. Paranasal sinus roentgenograms showed changes consistent with chronic maxillary and right ethmoidal sinusitis. Subsequent transbronchial lung biopsy revealed necrotizing vasculitis of Wegener's granulomatosis. Cultures of lung parenchyma grew *C. immitis*. Although coccidioidomycosis may be associated with other diseases, to our knowledge this is the first reported case of this mycosis coexistent with Wegener's granulomatosis. Continuation of antifungal therapy and initiation of corticosteroids and cyclophosphamide appears to have induced remission in coccidioidomycosis and Wegener's granulomatosis.

### Peripheral Neuropathy Associated With Beta-Carotene Therapy

Richard Evans, M.D. and H. C. Goodpasture, M.D.,  
UKSM-Wichita

Erythropoietic protoporphyria is being described with increasing frequency in the medical literature since the first report clearly delineating the syndrome in 1961. Treatment for this syndrome was not considered very effective until studies supporting the use of Beta-carotene were reported. Although the only controlled trial that has been carried out using Beta-carotene was not successful in showing any benefits, treatment with Beta-carotene has in general been considered free from significant toxicity. The only side effects commonly reported have been yellow discoloration of the skin (reversible on cessation of treatment) and occasional occurrence of diarrhea.

We are reporting a patient with erythropoietic protoporphyria who was treated with Beta-carotene and developed a sensory polyneuropathy. On several occasions, temporal relationship between exacerbation of symptoms with intake of Beta-carotene and improvement of symptoms with cessation of Beta-carotene suggested that Beta-carotene played a role in the development of the peripheral neuropathy.

Because Beta-carotene is metabolized into vitamin A in the human intestine, vitamin A toxicity was considered as a possible cause of this patient's peripheral neuropathy. This was not considered likely, however, after search of the literature revealed that peripheral neuropathy was not described as a side effect in cases of vitamin A toxicity and that commonly described side effects of Vitamin A intoxication were not present in this patient.

## KIDNEY, ELECTROLYTES & HYPERTENSION

### Prediction of Creatinine in Chronic Renal Failure

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Chronic renal disease has long been thought to follow an erratic course. Rutherford, *et al.* found that the course of chronic renal disease could be predictably expressed as the reciprocal of the creatinine or the log of creatinine vs time.

We have used this technique to predict the course of chronic renal disease prospectively in several individuals and have, also, applied this technique retrospectively. Using linear regression analysis, a line was generated from a minimum of three serum creatinines with Rutherford's method. Once the slope of this line was different from zero, a future creatinine could be predicted when studied both prospectively and retrospectively. The correlation coefficient showed a high degree of correlation between the points plotted and the line generated. The rate of change of the creatinine varied between individuals and with different renal disease, but was predictable in each patient once the line was established.

In summary, this technique may be helpful to determine the end point of the disease (*i.e.*, when the patient will require

dialysis), and also may be useful in evaluating the response of a renal disease to treatment (*i.e.*, the response of glomerulonephritis to corticosteroids).

### Recurrent Hemoglobinuric Acute Renal Failure Due to G6PD Deficiency

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Dennis A. Diederich, M.D., UKSM-KC

Hemolysis is a well recognized cause of acute renal failure (ARF). ARF from hemolysis due to G6PD deficiency (G6PDD) is infrequently reported in the United States. We report a case of recurrent hemolytic ARF in a G6PDD individual.

Between 1966 and 1979 a now 49-year-old black male was admitted on five occasions for ARF. Each episode was associated with severe hemolysis with elevated serum free hemoglobin and depleted haptoglobin, hemoglobinuria, and anemia ranging from 5.4-7.2 gm/100 ml with interhemolytic levels of 13 to 17 gm/100 ml. G6PD levels were <10 per cent normal in the recovery stage. The common precipitating hemolytic stress appeared to be acute pancreatitis. Other causes of ARF were excluded. Each episode was non-oliguric (>600 cc/day urine output) and was followed by recovery of renal function without dialytic therapy despite maximum serum creatinines of 9.9-26.4 mg/100 ml. Renal biopsy on the third admission demonstrated changes typical of those seen in pigment nephropathy.

A normal G6PD level in the acute hemolytic period does not exclude the diagnosis of G6PDD as the blood at that time is depleted of G6PD deficient cells.

The diagnosis of G6PDD should be considered when ARF presents with anemia, evidence of intravascular hemolysis, and hemoglobinuria despite normal levels of G6PD. This phenomenon can be recurrent.

### Determinants of Renal Response to Intravenous Vanadate

Howard Day, M.D.; Agnes Heinz, M.D.; Barbara Lukert, M.D. and  
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Vanadate (V), an oxy-anion derivative of vanadium, is a powerful inhibitor of the isolated  $\text{Na}^+ \text{K}^+$  ATPase of kidney, and intravenously causes profound natriuresis in conscious rats. We found that V is bound to serum proteins, an important factor in the renal response to intravenous V. At 10  $\mu\text{M}$  total V, 78 per cent is bound in serum; at 130  $\mu\text{M}$ , 39 per cent is bound, indicating displaceable binding of V from serum proteins. In conscious rats, half-maximal fractional Na clearance ( $\text{C}_{\text{Na}}/\text{C}_{\text{iothalamate}} = 0.25$ ) was caused by total serum V concentrations of 40-60  $\mu\text{M}$ . Urinary excretion of cyclic AMP was unchanged, 0.15 nM/min before and 0.13 after maximal natriuresis by V in four rats, indicating that natriuresis is not due to stimulation of adenylate cyclase by V. Vanadate's inhibition of the isolated  $\text{Na}^+ \text{K}^+$  ATPase is intensified by extracellular  $\text{K}^+$ . In conscious rats, intravenous K sufficient to raise the serum level above 5.5 mM caused  $\text{C}_{\text{Na}}/\text{C}_1$  to increase 9.1 per cent; V alone (5  $\mu\text{M}/\text{Kg/hr}$ ) increased  $\text{C}_{\text{Na}}/\text{C}_1$  6.6 per cent; V and K together increased  $\text{C}_{\text{Na}}/\text{C}_1$  28.3 per cent, a more than additive effect. These studies show that intravenous V causes marked natriuresis that is dependent on the unbound moiety in the extracellular fluid. Potentiation of V's inhibitory effect on renal Na reabsorption by potassium strongly suggests that the oxy-anion causes natriuresis by inhibiting renal  $\text{Na}^+ \text{K}^+$  ATPase in the intact kidney.

### Renal Cell Carcinoma Presenting as a Pulsatile Sternal Mass

Robert W. Holmes, M.D. and Ernest W. Crow, M.D.,  
UKSM-Wichita

Pulsating metastases to the sternum are rare in occurrence and often represent metastatic renal cell carcinoma. The unpredictable nature of this neoplasm and its multitudinous means of



presentation often make diagnosis and management difficult. We report two patients who presented with pulsating sternal tumors found to be metastatic renal cell carcinoma. Both were treated with combined nephrectomy, irradiation of the sternum, and later sternectomy after reduction in tumor size. The metastatic potential of renal cell carcinoma, its medical and surgical management, and a review of the literature regarding pulsating sternal tumors are presented.

**Adult Hemolytic Uremic Syndrome (AHUS) — An Early Manifestation of Carcinoma of the Prostate**

Jerry B. Cohlmlia, M.D. and Frank M. Grund, M.D.,  
UKSM-Wichita

Two patients are described with severe thrombocytopenia, hemolytic anemia and renal failure, who were subsequently found to have adenocarcinoma of the prostate. The similarities in these patients are remarkable in that their ages were 56 and 57 yrs, both presented with left flank and back pain, and scant bloody urine which progressed to anuria and renal failure.

**ADMISSION LABORATORY DATA**

	Patient #1	Patient #2
Platelet count	8,000	17,000
Hemoglobin	12.1	9.3
Coomb's test	Negative	Negative
LDH	2,580	4,750
Haptoglobin	<10	<10
BUN	151	131
Creatinine	9.3	14.5
FSP	pos > 1:40	pos > 1:40

The patients were treated with aspirin, Persantine and corticosteroids, along with peritoneal dialysis, with resolution of the coagulopathy and return of renal function: patient #1 at 16 days and patient #2 at 20 days after admission. The diagnosis of adenocarcinoma of the prostate was made at 29 and three mos respectively after the initial diagnosis of AHUS.

We propose that adult males who present with AHUS should be evaluated extensively for occult prostatic carcinoma.

**NEUROLOGY**

**Review of Metastatic Brain Disease**

Michael Cannon, M.D. and Lauren K. Welch, M.D.,  
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This paper presents a case of metastatic brain disease and discusses metastatic tumors in general.

The hospital records of a patient with metastatic brain disease were reviewed. Med Line and Cancer literature were used to research the literature.

A 68-year-old white male with primary adenocarcinoma of the lung and multiple cerebral metastases, who presented with dementia, ataxia and quadraparesis, responded to whole brain irradiation and steroids.

Metastatic tumors of the brain represent approximately 10 per cent of those clinically investigated, and 40 per cent of those confirmed at post mortem. Primary sites include lung (28%), unknown (22%), breast (15%), melanoma (14%), kidney (10%), other (11%). Approximately one-third of metastatic brain tumors are single and two-thirds are multiple. Median survival varies from one to eight months. There are no specific manifestations of metastatic tumors, but the majority present with symptoms and signs of increased intracranial pressure. Radionuclide imaging and CT scanning are the diagnostic treatments of choice. Surgery in selected patients may prolong life. Radiotherapy, while not prolonging life, will yield symptomatic

improvement in 75 per cent of cases. Chemotherapy is applicable to tumors recurring after surgery and/or radio therapy, or tumors not resectable or radiosensitive.

A case of metastatic brain tumor is presented and discussed. The epidemiology, clinical manifestations, diagnosis and treatment of metastatic brain disease in general are discussed.

**Benign Intracranial Hypertension in Association with Renal Failure**

Jerry B. Cohlmlia, M.D.; Bruce B. Ochsner, M.D. and  
Arnold M. Barnett, M.B., UKSM-Wichita

Benign intracranial hypertension (BIH), pseudotumor cerebri, is a syndrome with elevated CSF pressure not associated with a space occupying lesion, with normal CSF and ventricular system. Precipitating factors include: otitis/mastoiditis, endocrine dysfunction, drug reaction, venous sinus obstruction, anemia, systemic lupus erythematosus or most commonly, unknown causes. In reviewing the literature, BIH has not been described in association with renal failure.

Presented is a 46-year-old female with a ten-year history of chronic glomerulonephritis progressing to renal failure. A Gortex graft was implanted in her right forearm and she was placed on hemodialysis. After seven months of hemodialysis, she presented with headaches and blurry vision. Physical examination showed bilateral papilledema, visual impairment, and horizontal nystagmus. Computerized tomography brain scan yielded completely normal results.

Past history is important in that she has a 20-year history of polycythemia vera, well controlled, and her hematocrit was never above 45 since the start of hemodialysis.

The raised CSF pressure seen in BIH is due to impaired CSF absorption. The combination of a high venous return via a large Gortex graft, in addition to the hemodynamic effect of hemodialysis, along with uremic toxin, is entertained as a cause for the BIH.

**Pituitary Cushing's Disease Treated with Alpha Particle Irradiation**

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Our patient was age 39 years when she was seen with mild hypertension, glucose intolerance, and a ten-year history of progressive Cushinoid changes. She was post-hysterectomy.

An outpatient endocrine evaluation suggested Cushing's syndrome with adrenal hyperplasia due to an ACTH secreting pituitary adenoma. A urinary free cortisol was elevated to 791 mcg/24 hr (n, 78-365), the diurnal variation of cortisol was lost, overnight dexamethasone suppression was abnormal, urinary 17-KGSs suppressed 31 per cent with 2 mg/day dexamethasone and 53 per cent of baseline with 8 mg/day dexamethasone. A plasma ACTH was 85.7 pg/ml, high normal. Tomography of the sella turcica found evidence of a pituitary microadenoma. A three-month trial of cyproheptadine (Periactin, 24 mg/day) did not change urinary free cortisol levels.

Our patient was treated with 9997 rads of cyclotron-generated alpha particle (proton beam) irradiation in June 1977 at the Donner Laboratory at Berkeley, California, by Dr. John Linfoot's team.

Urinary free cortisols normalized in but 2½ months. One and two year followups showed a return of overnight dexamethasone suppression and a partial return of the diurnal variation of ACTH and cortisol. The TSH response to TRF was delayed, but all other pituitary function tests were normal. Our patient is asymptomatic and needs only a diuretic.

Alpha particle irradiation was effective in our patient with Cushing's disease with no significant morbidity.



## Neurological and Immunological Implications of Primary Cerebral Amyloid Angiopathy

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Two cases of histologically documented primary cerebral amyloid angiopathy complicated by spontaneous intracerebral hematoma were studied. Amyloid was detected in the cerebral vessel wall and was limited to the brain. All immunoglobulin classes were detected in the amyloid deposits by the immunoperoxidase technique, and electron microscopy documented the fibrillary nature of the amyloid deposits. Immunologic studies of cerebral spinal fluid (CSF) and blood B and T cells demonstrated increased B cells within both CSF and blood compartments. Characterization of the concanavalin A activated suppressor cells with respect to B and T cell targets was tested by the immunofluorescent technique for the former and phytohemagglutinin proliferative response for the latter. Results showed marked deficiency of the CSF-suppressor cell function with respect to B cell, but not T cell targets. Blood suppressor cells from the patient were similar to an age matched control. Compartmental central nervous system suppressor cell dysfunction resulting in B cell activation could play a role in facilitating amyloid deposits in the brain. Immunologic mechanisms could be responsible for the dementia associated with amyloid angiopathy.

## PULMONARY DISEASE

### Unilateral Pulmonary Edema: A Case Report and Review of the Literature

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G. Muralidhara Rao, M.D., Veterans Administration Medical  
Center, Leavenworth

The occurrence of unilateral pulmonary edema is rare. We report one such case in Swyer-James syndrome. A 79-year-old male was admitted with a history of increasing shortness of breath. He had a history of chronic obstructive pulmonary disease. A severe attack of pneumonia was reported 30 years earlier. On the fourth hospital day, he experienced breathing difficulty with cyanosis and frothy sputum. Examination disclosed bilateral ronchi and rales limited to the right lung fields and diminished air entry over the left lung. Chest x-ray showed unilateral pulmonary edema. He was intubated and given intravenous digoxin and furosemide with improvement in the clinical symptoms and clearance of pulmonary edema. Serial EKG and enzymes were consistent with acute anterior myocardial infarction. After recovery from the acute episode, a ventilation lung scan with Xenon<sup>133</sup> demonstrated a normal wash out from the left lung. Perfusion lung scan with technetium 99m labeled microspheres showed almost total absence of perfusion to the left lung. Pulmonary angiogram showed diminutive left pulmonary artery and its branches. Bronchogram showed minimal bronchiectatic changes. These findings are diagnostic of Swyer-James syndrome. A review of the conditions causing unilateral pulmonary edema will be presented.

### Reversible Airway Disease in Bronchiectasis

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A recent report suggested that some patients with bronchiectasis may show good response to inhaled bronchodilator. Based on this observation, we made a retrospective review of cases of bronchiectasis admitted to Respiratory Section at our hospital from 1976-78. The diagnosis of bronchiectasis was made in ten patients by the characteristic chest x-ray, persistent coarse rales,

and persistent sputum production. Bronchogram was done in only one patient, since all other patients had severe obstructive lung disease and bronchogram was considered a hazard. All patients were male and mean age was 64 yrs. FEV<sub>1</sub> and FVC before and after isoproterenol inhalation was recorded in all patients. Patients who demonstrated at least 15 per cent improvement in FEV<sub>1</sub> and FVC were considered to have reversible airway disease. Five out of the ten patients had significant response to bronchodilator with a mean improvement of 24 per cent of FEV<sub>1</sub> and 34 per cent VC. We feel that the reversible airway disease seen in patients with bronchiectasis is coincidental and is not related to severity of obstructive airway disease.

### Salicylate-Responsive Asthma

David Gorenz, M.D.; Mark S. Fixley, M.D.; Donald Youll, M.D.;  
Gerald R. Kerby, M.D. and Daniel Stechschulte, M.D., UKSM-KC

An asthmatic who improved after salicylates was studied to determine the degree, site, and mechanism of bronchodilation from salicylates as compared to other bronchodilators. Following isoproterenol and after theophylline (Theo) there was a decrease in the airflow obstruction. The greatest bronchodilation occurred after salicylsalicylic acid (SSA). The pulmonary function data is summarized:

	Baseline	Isuprel	Theo (10.2 µg/ml)	SSA (18 mgm/dl)
FEV <sub>1</sub>	1.88 L	2.79	2.99	3.90
FVC	2.92 L	4.20	5.14	5.48
FEF	1.11 L/sec	1.66	1.51	2.68
SGaw <sup>25-75</sup>	0.11	0.35	0.21	0.43
$\Delta\dot{V}_{\max 50}$	0%	44%	49%	44%

The  $\Delta\dot{V}_{\max 50}$  was 0 per cent prior to therapy documenting that the small airways were the predominate site of airflow obstruction. Following SSA as well as with isoproterenol and theophylline there was an increase in the  $\Delta\dot{V}_{\max 50}$ . This suggests that in this patient the SSA as well as the bronchodilators resulted in bronchodilation predominantly in the small airways. An abnormal synthesis of prostaglandins or their intermediate metabolites in either aspirin-induced asthma or asthma treated with salicylates is speculative. Thrombin-induced secretion of <sup>14</sup>C-5HT from the washed platelets of the patient was the same as controls. A prostaglandin receptor abnormality in lung tissue could also explain the observed phenomenon. An assessment of platelet responsiveness to PGE<sub>1</sub> and PGF<sub>2α</sub> is in progress. Salicylates are capable of reversing airflow obstruction, but their mechanism of action is not defined.

### Tracheobronchial Involvement in Primary Systemic Amyloidosis

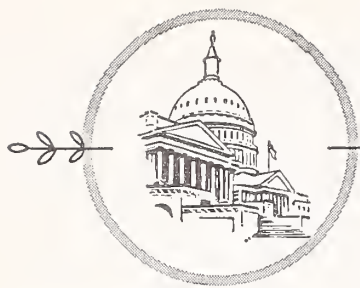
Helmy Tawadros, M.D.; Dorai Thiagarajan, M.D.;  
Ramon Guillan, M.D. and B. B. Mukherji, M.D.,  
Veterans Administration Medical Center, Topeka

Reports on lower respiratory tract involvement in primary systemic amyloidosis (PSA) have been very few and mainly autopsy derived. In this case report, the presence of tracheobronchial involvement in PSA has been documented by fiberoptic bronchoscopy (FOB) and bronchial biopsies showing typical histologic features of amyloid.

A 65-year-old white male was first seen in 1977 because of dyspnea, general fatigue, and weight loss. He had cardiomegaly with conduction defect, and echocardiogram was consistent with infiltrative cardiomyopathy. He had normocytic anemia and hepatomegaly. Liver and scalene node biopsies confirmed the presence of amyloid. Other studies included immunoelectrophoresis of serum and urine for M components, and Bence-Jones proteins were negative as were bone marrow and rectal

(Continued on page 35)





## Socio - ECONOMICS

# Perinatal Care Centers

THESE GUIDELINES are designed to assist institutions that are considering development of Level II perinatal care capabilities and to serve as a benchmark for evaluation of progress and capability of Level II centers currently existing or under active development. Since these statements reflect an achievable median level of function, care exceeding these levels should be encouraged whenever possible. It is understood that these guidelines will require flexibility in adjustment to local needs and to future changes and progress in perinatal care techniques.

Establishment of a Level II perinatal center requires a significant commitment of effort, manpower, and resources. A hospital striving to offer Level II services may not be able initially to accomplish all goals put forth in these guidelines, and a period of years for developing and upgrading of an appropriate timetable may be required. Hospitals wishing to achieve Level II designation should do so only with evidence of strong support from medical and nursing personnel at that hospital as well as the hospital administration and trustees or other governing bodies. A broad base of community support is also essential.

New initiatives for the development of Level II centers should be made within the context of perinatal health care planning for the region and state and be consistent with the health care planning guidelines of the local health systems agency and the statewide perinatal care program.

\* These guidelines were formulated by the Kansas Regional Perinatal Care Program Medical Council consisting of the following members: John Calkins, M.D., Kansas City; Carl Christman, M.D., Wichita; Robert Enberg, M.D., Hays; Howard Fox, M.D., Kansas City; Russell Nelson, M.D., Wichita; and Patricia Schloesser, M.D., Topeka.

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### *Developmental Guidelines for Kansas\**

Leadership and administrative roles should be identified early in the development of a Level II program in order to assure a broad base of support and the necessary liaison communications. A joint committee comprised of representatives from pediatrics, obstetrics, and family practice physicians and nurses should be established to study perinatal mortality and morbidity of the institution and the region.

### **Definition of Level II**

Level II perinatal centers in Kansas will be those hospitals that are not only capable of serving the uncomplicated obstetrical and newborn patients but also a selected high risk obstetrical and newborn population. This latter group may be drawn not only from the population normally served by that hospital, but also from referrals within the geographic region. The actual types of high risk obstetrical and newborn patients cared for at a particular Level II center may vary according to local capabilities and proximity to Level III centers. Level II centers should provide a standard of care that is sufficient for most of the contingencies encountered by an obstetrical and newborn service. In most cases these services will include care for infants with transient tachypnea of the newborn, mild respiratory distress syndrome, hyperbilirubinemia, hypoglycemia, and sepsis. Mothers with complex obstetrical or medical courses and newborns who require long term ventilatory assistance, who are very immature or of very low birth weight, those who have significant cardiovascular disease or congenital anomalies requiring pediatric surgery, or those who have otherwise complex and serious illness should be transferred to Level III centers. The care provided in Level II centers should be of high quality and in no way inferior to comparable services that are available at

Level III centers. The limitations of the Level II centers are therefore limitations in the scope of services offered, not limitations in quality.

The success of a regionalized perinatal care program with designated levels of care is contingent upon establishment of effective communications between the three levels of care and establishment of a program of continuing professional education. Effective communications are essential to establish smooth transfer of patients between the three levels as the patients' medical and social needs dictate. An educational program should be established by a Level II center that provides didactic offerings, on-site consultations, and 24-hour availability for medical and nursing consultations for surrounding Level I centers. While the major thrust of educational activities can be expected to come from the Level III centers, it is essential that the Level II centers recognize their responsibility for education as well.

## Level II Services

### *Outpatient – Prenatal Care*

—Prenatal care for uncomplicated patients consistent with guidelines in the *Manual of Standards of the American College of Obstetricians and Gynecologists*.

—Identification of mother and fetus at high risk.

—Diagnostic techniques including x-ray and ultrasound visualization of the fetus and amniocentesis.

—Readily accessible laboratory services providing estriols, photometric analysis of amniotic fluid, and lecithin sphingomyelin ratios.

—Supportive public health and other community nursing services. Social workers, nutritionists, and mental health services are essential components of total service.

### *Inpatient – Prenatal Care*

—Beds must be available for patients with medical and surgical complications of pregnancy requiring inpatient care.

### *Intrapartum Care*

—Number of labor and delivery rooms to be consistent with anticipated average daily postpartum beds.

—Designated areas for intensive intrapartum and postpartum care.

—Capability for cesarean section with a thirty-minute start-up time. The operating room used should be part of or in close proximity to the obstet-

rical suite. If the room designated for this purpose is used for other surgical procedures, either elective or emergency, a "back up" room must be provided; this could be a delivery room appropriately staffed and equipped.

—An isolation protocol shall be established.

—Anesthesia services shall be available around the clock for deliveries.

—Twenty-four hour blood bank service. Fresh type O/RH negative blood and fresh frozen plasma shall be available at all times for emergencies.

—Twenty-four hour radiology service with ability to respond to STAT requests.

—Twenty-four hour clinical laboratory service with ability to respond to STAT requests.

—Capability for continuous electronic maternal-fetal monitoring with one or more physicians with special interest and training in interpretation of EFM records.

### *Postpartum Care*

—There will be an area designated for postpartum care and adequate beds will be available for postpartum patients on a continuous basis with flexibility to use these beds for clean gynecologic and antepartum patients when necessary.

—Assigned responsibility for assuring that mothers are given helpful preparation for the care of their infants and themselves at home.

### *Normal and Complicated Neonatal Care*

—Normal neonatal care consistent with the recommendations of the *American Academy of Pediatrics, Hospital Care of Newborn Infants* (6th edition).

—Neonatal care for complicated conditions.

Capability for resuscitation of the newborn in the delivery room, prior to transfer to the nursery, including temperature control, short-term ventilation with oxygen and compressed air via bag and mask, external cardiac massage, and infusion of alkali. Equipment needed includes devices to restore or maintain body heat, suction, laryngoscopes, and endotracheal tubes.

A special care area in which high risk infants may receive care and severely ill infants may receive further treatment prior to transfer to a Level III unit. The special care area may be a separate room or a designated area in the full term nursery or adult intensive care unit. It should contain no fewer than four beds and be staffed with specially trained nurses in appropriate numbers. Capability in this nursery should include:

- short-term assisted ventilation via bag and mask,



intravenous therapy with infusion pumps, and monitoring of blood gases via umbilical artery.

- capability to perform continuous cardiac monitoring with the required alarm systems.
- capability to measure blood pressure.
- capability in performing exchange transfusion.
- twenty-four hour radiology service including portable machine for use in the nursery (30-minute turn around time for STAT request is recommended).
- twenty-four hour micro laboratory determinations for blood gases, bilirubin, blood sugar, electrolytes, and hematocrit.
- test results for hematocrits and blood gases should be available within 15 minutes.

### Consultation and Transfer

In those conditions where the welfare and survival of the mother is threatened, consultation should be sought from a Level III unit and transfer of the mother considered. The survival of a healthy infant may depend on the immediate availability of complete, intensive care, and therefore, transfer of the mother before or during labor may be necessary. In order to assure the earliest provision of care to a mother or newborn being transferred, the Level II center should establish a transport team and transport capabilities and participate in the planning for transfer of patients from Level I to their Level II facility, utilizing the Level II transport team and equipment whenever appropriate. An individual from the Level II center must be designated at all times to receive transfer requests.

Similarly in transfers from Level II to Level III, the Level III center must assume responsibility for providing appropriate transfer plans, personnel, and vehicle.

### Personnel Requirements

#### *Direction and Administration*

—PHYSICIANS: Each institution should have at least one board-certified pediatrician with special interest, training, and experience in neonatology to serve as co-directors of the services.

—NURSING: There should be a supervisor of perinatal nursing services with overall responsibility for inpatient activities in the maternity-newborn unit. This individual should be a professional nurse with an advanced degree in obstetric or neonatal nursing or the equivalent in experience in the care of patients at high risk.

—OTHER: An administrative coordinator should be responsible for handling functional and operation-

al management. The coordinator may be a professional nurse with administrative expertise, but in any case, the coordinator should be responsible to the co-directors of the Level II unit.

#### *Labor and Delivery*

—PHYSICIANS: The obstetrician who is co-director of the Level II perinatal unit or his designee should be the director of the obstetrical department and will, with the other physicians and the nursing staff, define and establish standardized procedures for all obstetric patients, be available for consultation and assistance in the management of high risk obstetric patients, participate in the in-service educational programs, and maintain close communications and coordination with the Level I and Level III units.

All deliveries should be attended by a physician. All deliveries of high risk mothers should have in attendance a physician with training in neonatology. A person able to resuscitate the newborn should be immediately available for all deliveries.

Full time obstetric anesthesia coverage should be provided and supervised. Safety of obstetric anesthesia depends principally on the skill of the anesthetist. The same level of competence of anesthesia personnel should be required for obstetrical procedures as for surgical procedures.

—NURSES: Professional nurses with training and experience in normal and high risk obstetrical care should be assigned in the labor-delivery area at all times. They must be fully competent in the recognition and nursing management of complications of labor and delivery, including capability in the techniques of electronic fetal monitoring. These nurses should supervise the performance of personnel with less training and experience. The actual staffing pattern for nurses and their aides should be adequate to provide optimal nursing care for every patient in labor and delivery. Such a pattern cannot be firmly and absolutely established, but one estimate is that two professional nurses for every three labor beds and one nurse's aid for every three delivery rooms are needed.

#### *Maternal Postpartum*

Insofar as possible, nurses who were with patients during labor and delivery should maintain contact during the postpartum period. There should be a head nurse responsible for the organization of care in the postpartum unit. Additional staffing should include one professional nurse and either one licensed practical nurse or one nurse's aide for every 12-16 patients without complications. One professional

nurse should be assigned for every 2-4 postoperative or otherwise complicated patients. It is emphasized that staffing patterns must be flexible and that patients' needs are the deciding factor.

### *Special Care Nursery*

—**PHYSICIANS:** The pediatrician who is co-director of the Level II unit will be the medical director of all nurseries in the hospital. He (she) will have extensive training and experience in neonatology and will, with the other physicians and nursing staff, define and establish standardized policies and procedures for the nurseries. All infants who are not patients of other physicians will be the responsibility of this director.

—**NURSES:** There should be a head professional nurse with considerable special training and experience in the care of sick infants and in relating to and communicating with parents. All nurses working in the special care nursery should be skilled in the observation and treatment of moderately ill infants including techniques of cardiorespiratory monitoring. A staffing pattern of one nurse for every four infants will usually be satisfactory but capability should exist for brief periods of 1:2 or 1:1 nursing when required.

Social services should be available through a hospital department.

A nutritionist with special knowledge and experience in maternal and perinatal nutritional management should be available. Consultation from medical and surgical specialists should be readily available.

### *Normal Newborn Nursery*

—**PHYSICIANS:** As stated above, the medical direction and establishment of uniform policies of all nurseries in the unit is the responsibility of the pediatric co-director of the unit. His (her) responsibilities in the normal newborn nurseries are the same as in the special care nursery.

—**NURSES:** Nurses working in nurseries only for normal newborns should be skilled in detecting deviations from normal, such as jaundice, and in the management of emergencies, *e.g.*, use of oxygen via bag and mask.

One professional nurse should be designated to have charge responsibilities for each shift with additional nursing personnel to provide a 1:8 nurse-infant ratio. Nursing personnel in the full term and special care nurseries and the obstetrical service may rotate assignments within these areas according to local preference and level of training. Coverage of these areas should be arranged so as to avoid pulling of nurses from other areas for spot coverage.

## **Commentaries**

I am an obstetrician associated with a multispecialty clinic in a town of 10,000 population. We have 11 physicians involved in providing maternity and neonatal care. I have been active in the Kansas Regional Perinatal Program development since its early inception, and feel I have a clear understanding of its purposes and goals. These can easily be summarized — to assist in upgrading and maintaining a quality level of care to expectant mothers and their newborn, while striving to maintain a balance in the cost of providing such quality care. I unequivocally approve of these goals.

Two requirements must be met to prepare an area to undertake the challenge of developing a Level II facility: (1) manpower; and (2) willingness by health care providers to devote time without financial return. In addition, it is essential that there be an active inservice education program and a conscientious committee to monitor the care provided.

The guidelines clearly define the need for obstetricians, pediatricians, well-trained family physicians, nurses, and other paramedical personnel; it would be beneficial for these personnel to be congenial. The guidelines also suggest that a number of tools be available — for example, ultrasound and fetal monitoring — and all such equipment should be utilized by personnel with appropriate interpretive skills. Where fetal monitoring is utilized, all nurses should be proficient in recognizing fetal monitor patterns. At least one physician with considerable knowledge of evaluating patterns should be available.

During the past decade there has been a significant decrease in the perinatal death rate in Kansas. This statistical change is due in large part to the efforts of the Kansas Regional Perinatal Program. The guidelines for establishing a Level II center are basically sound, complete, attainable by the smaller hospital communities in Kansas, and clearly outline the needs and responsibilities to develop such facilities. They fit well into the overall health planning at state and national levels, and have been compiled by physicians practicing in Kansas rather than being dictated by federal regulators.

As with any new undertaking, perinatal care centers must have guidelines for structuring at Levels I, II, and III.

*John F. Benage, M.D., OB/GYN*  
Fort Scott

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Perinatal care has evolved to encompass a spectrum from routine care for normal healthy newborns



requiring little or no intervention to extremely complex care for very ill newborns who require almost total life support. Several principles of care have evolved:

1. It is desirable to have the most sophisticated care available to all patients;
2. The complexity and sophistication of that care depend on individual patient need; and
3. The more sophisticated the care, the greater the limitation on availability due to the expense of equipment and need to concentrate trained personnel where their skills will be maintained and utilized.

Therefore, although it might appear desirable to have the most sophisticated care at every hospital where babies are delivered, in many cases the equipment would be infrequently used and personnel skill levels would decline. A practical solution is regionalization of care. Thus the majority of deliveries which are normal and healthy can be done by a physician in a hospital familiar and near to the home. An organized backup system is also available if more sophisticated care is needed.

Inherent in the development of adequate regionalization are communication, teaching and outreach between levels of care, and definition of standards of care.

Kansas has modeled its regionalization program on systems in other states such as Wisconsin and Colorado. With capabilities of highly sophisticated and complex care developed at the University of Kansas Medical Center in Kansas City and Wesley Medical Center in Wichita, Level III referral centers could begin to function, and Level III guidelines were then devised.

Guidelines should be viewed as goals to be achieved and should remain flexible so that varying needs in urban and rural areas may be met.

It is important to recognize the need for planning and cooperation in developing a medical service requiring complex equipment and highly trained personnel. Development of a Level II unit is expensive, and operating costs are high. A high level of utilization is essential for efficiency and maintenance of skill levels. Units should be planned to meet a demonstrated need. Duplication of units serving a given geographic area results in increased expense and dilution of available community resources. Coordination of planning and communication with Level I and Level III centers is essential.

Experience with the system thus far indicates that services available to babies requiring care at all levels is provided promptly and efficiently. Infants referred to Level III centers are referred back to their

referring unit as soon as their condition permits to provide less expensive convalescent care closer to the family home.

*Arthur C. Cherry, M.D., Pediatrician  
Topeka*

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We have reviewed the guidelines for the development of Level II perinatal care centers in Kansas, and find that they represent a reasonable approach to the development of such centers. They are sufficiently detailed to allow hospitals to define their potential for meeting the needs of high-risk infants and yet are flexible enough so that hospitals will not be discouraged from attempting to develop such programs. We support the implementation and utilization of these guidelines, and are confident that the resulting facilities will be an important asset to the care of newborns in Kansas.

The only potentially significant weakness is the lack of minimal criteria. However, we understand that if very rigid minimal criteria were set, some hospitals with potential for adequate units might be discouraged from developing them. When hospitals with such potential have reviewed the guidelines, it may be helpful to seek their involvement in the definition of minimal standards. It is also important that such units be encouraged to review their present level of operation and to clearly define areas of strength and weakness in order to develop long-range plans for upgrading of their units to the median level.

We are willing to provide input that might be helpful to units in developing their programs. We feel that the guidelines represent a positive step in the care of high-risk infants and mothers in Kansas.

*Michael D. Bailie, M.D., Ph.D.*

Professor & Chairman, Dept. of Pediatrics

*Kermit E. Krantz, M.D., Litt.D.*

Professor & Chairman, Dept. of OB/GYN

University of Kansas Medical Center

Kansas City

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The development of Kansas guidelines for perinatal Level II centers by physicians, nurses, hospitals, and the public maternal and child health service is an excellent example of partnership between the private and public sector to improve pregnancy outcome and to decrease infant mortality. Although neonatal mortality has decreased dramatically during the past decade, further improvements in perinatal

outcome can be achieved by a coordinated state network that offers levels of specialization for high risk mothers and their newborns as described in these guidelines.

The 1967 amendments to Title V of the Social Security Act require that each state's Maternal and Child Health Annual Plan provide for a state perinatal system. The Kansas Regional Perinatal Care Program is to be commended for developing this key component of standards for Level II perinatal care centers. It is appropriate that they are firmly based upon the recommendations set forth by the National Committee on Perinatal Health's publication, *Improving the Outcome of Pregnancy*, which is recognized as the model in the country. Naturally adaptations are necessary for Kansas in view of our large geographic area with a relatively low population density. For example, we believe that quality Level II care need not have a minimum of 1,500 deliveries annually as proposed in the national standards.

We recognize that a number of Kansas hospitals are in various stages of development in meeting these guidelines. Therefore we believe it would be premature to make official designations of Level II centers through hospital regulations. Rather these guidelines should be viewed as goals to be accomplished on a voluntary basis by hospitals desiring to provide Level II care.

As the total perinatal plan evolves, linkages between Level I and II hospitals and community health services regarding referrals, consultation, and education will become essential.

In the future, hospitals that elect to offer Level II care will assume a leadership role in their area, thus assuring a continuum of quality maternity and infant care.

*Patricia T. Schloesser, M.D.*, Director  
Bureau of Maternal & Child Health

*Joseph G. Hollowell, Jr., M.D.*, Director  
Division of Health  
Kansas Dept. of Health & Environment  
Topeka

The combining of the disciplines of neonatology and obstetrics into the specialty of perinatology has been the basis for an efficient and effective method of health care delivery to a specific high risk population. Through the efforts of many dedicated people, regionalization of perinatal care has augmented this process. With the institution of regionalized care, it became necessary to identify certain parameters considered basic to its structure. In its earliest beginnings, the Kansas State Perinatal Committee, with input from many local health professionals, developed guidelines for each of the three levels of perinatal care. In an effort to familiarize the public with these guidelines, it was decided to publish them in *The Journal of the Kansas Medical Society*. It should be emphasized that these are submitted only as guidelines or recommendations for the development of a certain level of expertise in perinatal care. They are not meant to limit the care given by any hospital but should serve to measure development of a facility; they represent the median of a certain level of perinatal care.

Utilization of an attention to these guidelines will help all of us in Kansas to continue to improve perinatal care delivery. There has been a significant decrease in perinatal deaths during recent years, and this trend can be expected to continue if we all work in concert to this end.

*Daniel K. Roberts, M.D., Ph.D.*

Professor & Chairman, Dept. of OB/GYN  
Professor, Dept. of Pathology

*Richard A. Guthrie, M.D.*

Professor & Chairman, Dept. of Pediatrics  
University of Kansas School of Medicine  
Wichita

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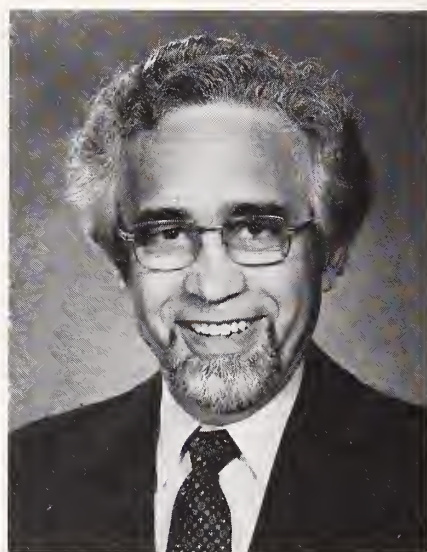
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## *The President's Message*

It sometimes takes winter weather to bring things back into perspective. Everything may be going along smoothly and we feel we are in full control of our destiny and then it comes — an ice storm. Ice accumulates on the power lines, the winds whip them, the lines break, transformers become overloaded, and sections of a town, county, or even the state black out.

It's then that you can't remember where there are any candles . . . after you find your flashlight batteries are dead. It's not just that the lights are out and you are doomed to darkness. The TV doesn't work, you can't use your electric razor, you can't even blow dry your hair. That fantastic microwave oven where you heat your quickie meals won't operate, in fact the electric oven and range won't work. You can't even pop popcorn. The stereo is inoperative, the doorbell is silent, and the furnace is shut off. The washer and dryer are out of action. When you open the refrigerator the inside is not only dark but it's beginning to warm up. And how long will the food stay frozen in the freezer? Near panic!

Isn't it amazing how much we rely on things we take for granted? The practice of medicine is like that, too. Not many of us could accomplish more than a small fraction of what we do without the help of other skilled members of the health care team. That team which includes not only nurses and pharmacists, but in the hospital also technicians, therapists, housekeepers and linen workers, record librarians, switchboard operators, volunteers, engineers, purchasing agents, central supply employees, and administrators. There are probably others whom I have failed to mention because I, too, fail to keep constantly aware of all those on whom I depend.



I continue to believe that physicians must head the health care team, but effective leadership requires respect not only from, but *for* others on the team. Let's lead with knowledge in special skills, seasoned generously enough with humility that it won't take an ice storm to restore the appropriate perspective in our joint effort to serve our patients.

A handwritten signature in dark ink, appearing to read "John R. Gordon, M.D.", written in a cursive style.

*President*



## *Medical Specimen – Don't Rush*

Periodically (pun intended), the friendly folks at Time-Life labor and bring forth another member of their family of publications. Such is *Discover* in which readers will be conducted through the world of science in the atmosphere of revelation and authority that is the hallmark of these publications. Although only a few months old, it shows considerable promise of fulfilling its intent. It has already established its relationship to its older siblings by the way it answers to complaints. In the gospel according to Luce, to err is human but not to be admitted. Letters of complaint or correction are met with frank denial or change of focus, emphasis, or direction by which the publication is never wrong.

In the first issue of *Discover*, an article took a swipe (in passing) at *The New England Journal of Medicine* for its "slow" reporting of medical accomplishments alleging that the public was poorly served since the "release of useful and sometimes vital medical information" was often delayed for months by the *NEJM* publication policy. The editor of *NEJM*, Arnold Relman, responded that the medical profession understood the delay quite well and did not consider it to be against the public good and pointed out several avenues for dissemination of vital medical "news" which serve that purpose well. *Discover* responded in classical fashion — repetition of its contention that the *NEJM* policy "delays timely reporting" (any apparent pun being theirs in this case). This is known as the "Play It Again, Sam" response since the repetition implies that the objector is too dense to have gotten the point in the first place, and assumes victory for the publication since the correspondent is not likely to pursue the matter further.

The medical press and the lay press have their generic communications base in common, but little else. What *Discover* demonstrates, however, is what

happens when the lay press attempts to apply its own methods and usage to the medical press. The laity in general compounds the same error in the assumption that having partaken of medical subjects as presented in the lay press, it is prepared to embark upon an enlightened program of self-care.

It is understandable that the public has a distorted conception of medical research and particularly the function of medical literature. They receive large doses of glamorized medical reports which present such things as accomplished fact. The time, effort, failures, and frustrations that have gone before are not good copy, although fictionalized and usually inaccurate versions may turn up on the tube years later. Lay journals are certain that theirs is the holiest of endeavors and are wont to cry out at any seeming limitation of their right to spread the news. In journalistic eyes, anyone attempting to limit their effort is viewed as a destroyer of the Constitution beginning with the First Amendment. Not that they report all or everything, of course — there are times when they agree with the source of material or on their own to withhold it. By some nice process of interpretation they decide what is good for us to know and what is not, thereby immediately distorting the concept of freedom they are so vigorously promoting. It is not so much the freedom to report, it would seem, as the freedom to decide what to report.

In this case, the lay press in the form of *Discover* interprets delay in publication of medical reports as withholding from patients "vital, even life-saving, information." By this mechanism they unintentionally stress the difference between news reporting and medical reporting by ignoring it. Medical reporting is primarily an educational effort. Moreover, the information imparted will be the basis for new information to be added in the future — or eliminated as it is found to be unnecessary or erroneous. This is



rarely a quick process. Haste is suspect and, as the man said, the art is long. The sudden discoveries, the "miracles," do not exist.

Given the nature and purpose of qualified medical information, the premature reporting of medical items does a far greater disservice to the public — false hopes, misinterpretations (requiring considerable physician time to counteract). This was expressed in a recent issue of *The American Journal of Medical Genetics* by Lawrence E. Carp, who in considering the status of prenatal diagnosis, remarks, "Too frequently drugs and procedures come precipitously into routine use after which the involved medical professionals insist that it would be unethical to deny half the population access to the new diagnostic or therapeutic miracle simply for the purpose of gathering controlled data." Dr. Carp's comment is, as a matter of fact, critical of the profession for actually being in too much of a hurry in itself.

The attitude expressed by *Discover* is in a sense both a cause and result of the current popularity of reducing medical efforts to lay terms and reporting as topical news (along with the concept of medical practice as a trade enterprise). But what the medical press is doing in delaying publication is not withholding, but assuring that what is reported is valid and worthy, points that are often lost in the zeal of the lay press to achieve quick reporting. The public is interested in results, particularly good ones, and more particularly good ones that are immediately available and cheap. This prompts the lay press to report anything that has a general appeal — just a word or two familiar to the public will do. Even if the activity reported is only the early effort and any projected benefit far off, the public reads it as accomplished fact and expects prompt delivery. Of course, medical success and promise make effective news reports, and lay reporters are under a great professional pressure to bring them to their readers — the "scoop" mentality — whether in the daily, weekly, or monthly publication form. To associate any virtues of fast reporting (with its consequences and competitive effort) to medical reporting is a total misconception of the latter.

Somewhere along the line, it should be noted that the lay press policy, perhaps unintentionally, tends to give aid and comfort to the cultists. The latter rely heavily on the use of terms borrowed freely and out of context from the legitimate medical efforts to endow their claims with an aura of scientific fact. Furthermore, since the cultists maintain no valid investigative efforts of their own, they borrow as they see fit from that of the establishment, albeit

incompletely, inaccurately, and inappropriately. Injudicious haste in medical reporting by the lay press not only provides them with material and sensitizes the public to a receptivity of it but tends to equate the cults with the ethical and responsible profession in the public mind. This is not a call for censorship — theirs or ours — because in our cumbersome but generally successful democracy, exposure of the cults is ultimately the surest way to contain them. But it is to suggest that the critical caution which medical publications utilize and the seemingly unnecessary delays, antithetical to lay press policy, have a vital role in developing the medical record that serves the patient best in the long run.

Although our comments have rhetorically drawn a sharp line between the two attitudes, the medical profession is by no means blameless in encouraging the lay press activities. The egos and enthusiasm of many investigators — and not only the mavericks — make them easy marks for eager reporters. Moreover, the various sponsors — foundations, government agencies, academic institutions — are always happy for an opportunity to expose their relationship to some dramatic and newsworthy effort, an association that would not reach the public if only the professional publications were involved. Such actions are not so much indication of a need to hasten medical publication as a need to reinforce the ethics and responsibility involved in the disclosure of "vital, even life-saving" information before it has been established that it *is* vital or life-saving — or valid, whatever the area.

Nor is this criticism of lay interest in medical matters and appropriate reporting of them, which is steadily increasing. The fact that a medical journal — even the most prestigious in the country — was the subject of an article in a lay magazine, is an expression of this interest. (And we must not have been the only one to be somewhat surprised to see that the *NEJM* was also the subject of an article in *Esquire* not too long ago.) At one time the primary readers of a medical journal — other than physicians and drug company advertising directors — were lawyers. Now, it would seem, we are being joined increasingly by reporters from the outside who will assume the responsibility of translating information to the public. We are by no means against this effort — it wouldn't make any difference if we were — but hope that they understand the responsibility they assume in this process. How accurately they report medical information will be determined by the quality and integrity of the individual writers and publications, and many are exemplary. But we offer to them

(Continued on page 35)



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**Use in pregnancy:** Safe use in pregnancy has not been established relative to possible adverse effects on fetal development. Therefore, Empirin with Codeine should not be used in pregnant women unless, in the judgment of the physician, the potential benefits outweigh the possible hazards.

#### **PRECAUTIONS:**

**Head injury and increased intracranial pressure:** The respiratory depressant effects of narcotics and their capacity to elevate cerebrospinal fluid pressure may be markedly exaggerated in the presence of head injury, other intracranial lesions or a pre-existing increase in intracranial pressure. Furthermore, narcotics produce adverse reactions which may obscure the clinical course of patients with head injuries.

**Acute abdominal conditions:** The administration of Empirin with Codeine or other narcotics may obscure the diagnosis or clinical course in patients with acute abdominal conditions.

**Allergic:** Precautions should be taken in administering salicylates to persons with known allergies: patients with nasal polyps are more likely to be hypersensitive to aspirin.

**Special risk patients:** Empirin with Codeine should be given with caution to certain patients such as the elderly or debilitated, and those with severe impairment of hepatic or renal function, hypothyroidism, Addison's disease, prostatic hypertrophy or urethral stricture, peptic ulcer, or coagulation disorders.

**ADVERSE REACTIONS:** The most frequently observed adverse reactions to codeine include light-headedness, dizziness, sedation, nausea and vomiting. These effects seem to be more prominent in ambulatory than in nonambulatory patients and some of these adverse reactions may be alleviated if the patient lies down. Other adverse reactions include euphoria, dysphoria, constipation, and pruritus.

The most frequently observed reactions to aspirin include headache, vertigo, ringing in the ears, mental confusion, drowsiness, sweating, thirst, nausea, and vomiting. Occasional patients experience gastric irritation and bleeding with aspirin. Some patients are unable to take salicylates without developing nausea and vomiting. Hypersensitivity may be manifested by a skin rash or even an anaphylactic reaction. With these exceptions, most of the side effects occur after repeated administration of large doses.

**DOSAGE AND ADMINISTRATION:** Dosage should be adjusted according to the severity of the pain and the response of the patient. It may occasionally be necessary to exceed the usual dosage recommended below in cases of more severe pain or in those patients who have become tolerant to the analgesic effect of narcotics. Empirin with Codeine is given orally. The usual adult dose for Empirin with Codeine No. 2 and No. 3 is one or two tablets every four hours as required. The usual adult dose for Empirin with Codeine No. 4 is one tablet every four hours as required.

**DRUG INTERACTIONS:** The CNS depressant effects of Empirin with Codeine may be additive with that of other CNS depressants. See WARNINGS.



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AMERICAN MEDICAL ASSOCIATION

# Principles of MEDICAL ETHICS

**Preamble:**

The medical profession has long subscribed to a body of ethical statements developed primarily for the benefit of the patient. As a member of this profession, a physician must recognize responsibility not only to patients, but also to society, to other health professionals, and to self. The following Principles adopted by the American Medical Association are not laws, but standards of conduct which define the essentials of honorable behavior for the physician.

- I. A physician shall be dedicated to providing competent medical service with compassion and respect for human dignity.
- II. A physician shall deal honestly with patients and colleagues, and strive to expose those physicians deficient in character or competence, or who engage in fraud or deception.
- III. A physician shall respect the law and also recognize a responsibility to seek changes in those requirements which are contrary to the best interests of the patient.
- IV. A physician shall respect the rights of patients, of colleagues, and of other health professionals, and shall safeguard patient confidences within the constraints of the law.
- V. A physician shall continue to study, apply and advance scientific knowledge, make relevant information available to patients, colleagues, and the public, obtain consultation, and use the talents of other health professionals when indicated.
- VI. A physician shall, in the provision of appropriate patient care, except in emergencies, be free to choose whom to serve, with whom to associate, and the environment in which to provide medical services.
- VII. A physician shall recognize a responsibility to participate in activities contributing to an improved community.

**Adopted by the A.M.A. House of Delegates  
July 20-24, 1980**



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## Abstracts

(Continued from page 23)

biopsy. Since March 1978, the patient had recurring episodes of tracheobronchitis with blood-streaked sputum partially relieved by bronchodilators and antimicrobials. Pulmonary functions confirmed the presence of moderately reduced air flow rates. In March 1979, a left pulmonary nodule was noted on chest x-ray which was suggestive of possible bronchogenic malignancy. FOB revealed polypoid mass extending from the trachea and involving both major bronchi with biopsies showing histologic characteristics of amyloid. A needle biopsy of the pulmonary nodule showed Class V malignant cells.

In conclusion: (1) Generalized amyloidosis may involve the lower respiratory tract and might lead to impairment of pulmonary physiologic functions; and (2) We advocate that FOB and needle lung biopsy are valuable tools to establish the diagnosis in this rare entity.

## RHEUMATOLOGY

### Plasmapheresis (P) in Active Systemic Lupus Erythematosus (SLE): Effects on Serum and Cellular Abnormalities

H. B. Lindsley, M.D.; Allen Pollack, M.D.; D. J. Stechschulte, M.D.; Gary Wood, Ph.D. and N. I. Abdou, M.D., UKSM-KC

The effects of P in active SLE were evaluated in one patient with central nervous system disease and pancytopenia unresponsive to (1) 60 mg prednisone and 100 mg cyclophosphamide/day; and (2) 1 gm steroid pulse therapy for three days. Clinical findings returned to normal by third week post-P. Patient was maintained on daily 20 mg prednisone and 50 mg cyclophosphamide post-P. Patient's plasma pre-P inhibited normal bone marrow colony forming units; this plasma factor could be adsorbed out by normal bone marrow cells, DNA cellulose or anti IgG immunoadsorbents, but not by normal platelets. The precursor cell antibody could not be detected three wks or 3 mos post-P. Anti-suppressor cell antibody (*J. Clin. Invest.* 63:536) was present pre-P and could not be detected three wks or 3 mos post-P. Con A-activated suppressor cells (*J. Clin. Invest.* 62:789) were incapable of suppressing Ig or anti DNA secretion when tested pre- or three wks post-P and returned to normal three mos post-P. P decreased by 75 per cent IgG class anti-DNA antibodies, decreased by 70 per cent immune complexes, and resulted in 400 per cent increase of CH50. Four mos post-P the patient is asymptomatic; her serum had trace amounts of IgM class and no IgG class anti-DNA antibodies. P is beneficial in life-threatening lupus and results in early reduction of serum antibodies and delayed improvement of cellular abnormalities.

Remember

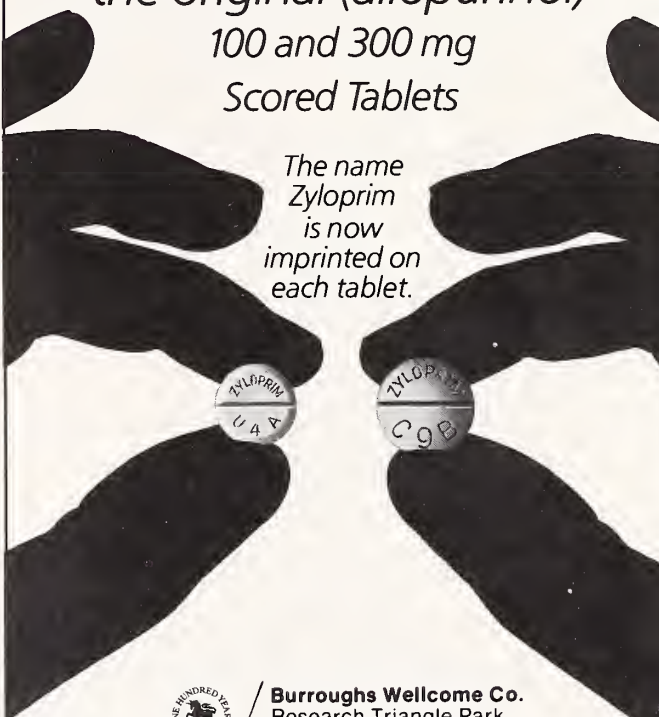
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## Medical Specimen — Don't Rush

(Continued from page 32)

and to *Discover* the suggestion that they keep in mind their duties to the laity as well as to the medical profession to keep this type of communication on the highest possible level and that they leave the methods, techniques, and character of professional medical communication to those who have for all these years been conducting it successfully enough to be considered so newsworthy. — D.E.G.



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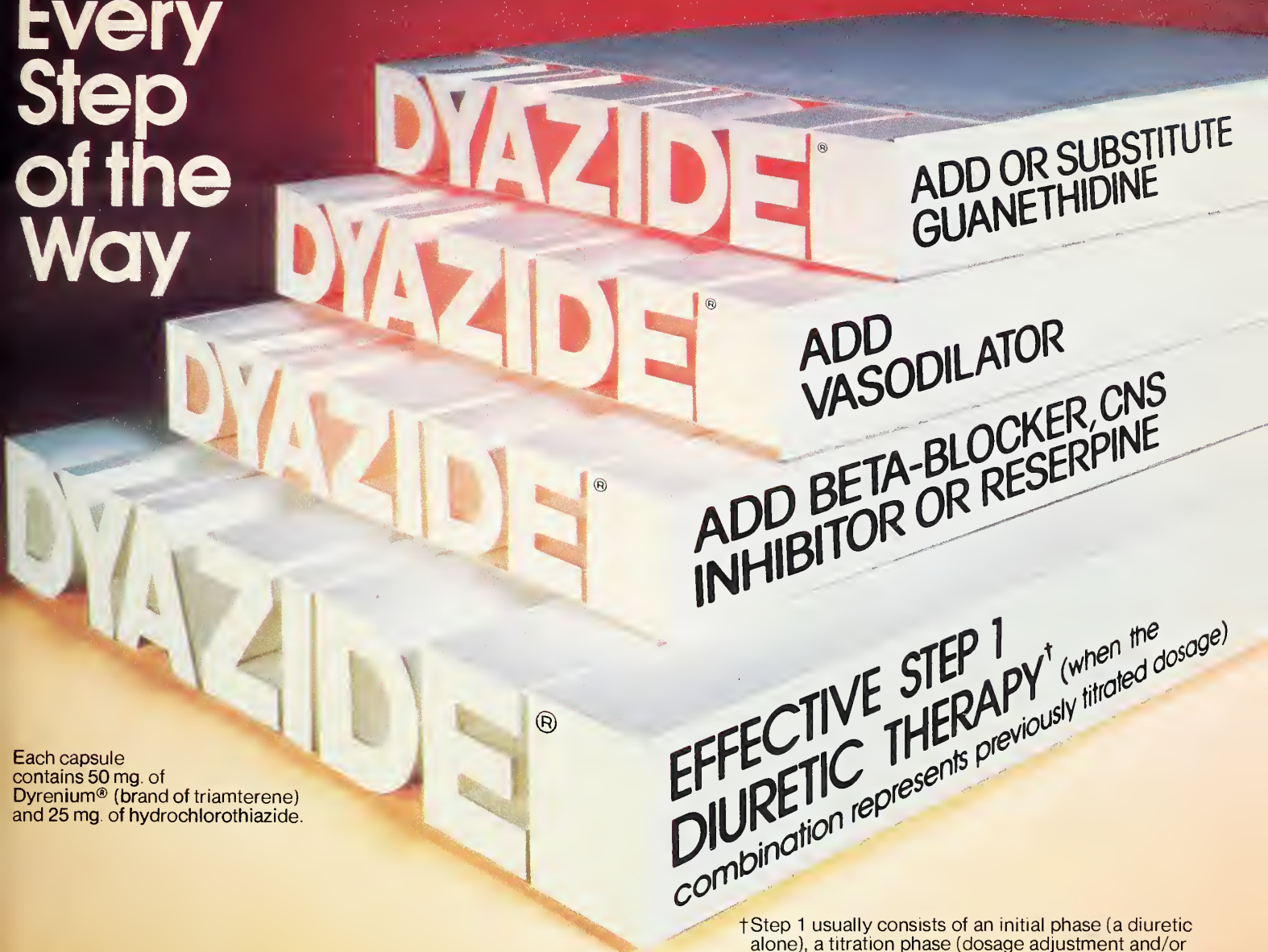
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## Every Step of the Way



Each capsule contains 50 mg. of Dyrenium® (brand of triamterene) and 25 mg. of hydrochlorothiazide.

**EFFECTIVE STEP 1 DIURETIC THERAPY<sup>†</sup>** (when the combination represents previously titrated dosage)

<sup>†</sup>Step 1 usually consists of an initial phase (a diuretic alone), a titration phase (dosage adjustment and/or addition of a K<sup>+</sup> supplement or K<sup>+</sup>-sparing agent) and a maintenance phase (a diuretic alone or in combination with a K<sup>+</sup> supplement or K<sup>+</sup>-sparing agent).

### Serum K<sup>+</sup> and BUN should be checked periodically (see Warnings).

Before prescribing, see complete prescribing information in SK&F Co. literature or PDR. A brief summary follows:

#### **WARNING**

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

**Contraindications:** Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

**Warnings:** Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K<sup>+</sup> levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K<sup>+</sup> intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, throm-

bocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

**Precautions:** Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Watch for signs of impending coma in severe liver disease. If spironolactone is used concomitantly, determine serum K<sup>+</sup> frequently; both can cause K<sup>+</sup> retention and elevated serum K<sup>+</sup>. Two deaths have been reported with such concomitant therapy (in one, recommended dosage was exceeded, in the other serum electrolytes were not properly monitored). Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with thiazides. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Anti-hypertensive effect may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with

possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia, although uncommon, has been reported. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

**Adverse Reactions:** Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances. Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and, rarely, allergic pneumonitis have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components.

**Supplied:** Bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (intended for institutional use only); in Patient-Pak™ unit-of use bottles of 100.

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# AN EXCEPTIONALLY FAVORABLE



## You can expect rapid relief of a broad range of symptoms

With Limbitrol, patients often improve within a week. Not only is insomnia relieved, but you will often see early relief of agitation, psychic and somatic anxiety, anorexia and feelings of guilt or worthlessness. This early response encourages patients to stay in therapy.

## You can minimize phenothiazine drawbacks

When you choose Limbitrol over a phenothiazine-containing product, you minimize the risk of tardive dyskinesia — now associated even with low dose, short-term phenothiazine therapy.<sup>1,2</sup> You also reduce the possibility of other extrapyramidal side effects, which occur in approximately 30% of patients receiving phenothiazines.<sup>3-5</sup> In contrast, the reported incidence of these disturbing reactions with Limbitrol or either of its compo-

nents alone is rare. (For a complete list of side effects reported with Limbitrol, please consult full disclosure.)

**References:** 1. Paulson GW. *NY State J Med* 79: 193-195, Feb 1979. 2. Hollister LE. Antipsychotic medications and the treatment of schizophrenia, chap. 9, in *Psychopharmacology from Theory to Practice*, edited by Barchas JD, et al. New York, Oxford University Press, 1977, pp 134, 145. 3. Domina EF. Antipsychotics phenothiazines, thioxanthenes, butyrophenones and rauwolfia alkaloids, chap. 25, in *Drill's Pharmacology in Medicine*, ed. 4, edited by DiPalma JR. New York, McGraw-Hill Book Company, 1971, p. 476. 4. Savner R, DiMascia A. Extrapyramidal syndromes and other neurological side effects of psychotropic drugs, in *Psychopharmacology: A Generation of Progress*, edited by Lipton MA, DiMascia A, Killam KF. New York, Raven Press, 1978, p. 1021. 5. Danilov PT, Stensson RL. *Dis Nerv Syst* 37: 629-635, Nov 1976.



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# Limbitrol<sup>®</sup> IV

**Tablets 5-12.5** each containing 5 mg clordiazepoxide and 12.5 mg amitriptyline  
(as the hydrochloride salt)

**Tablets 10-25** each containing 10 mg clordiazepoxide and 25 mg amitriptyline  
(as the hydrochloride salt)



## Efficacy without a phenothiazine

Please see summary of product information on following page.



## LIMBITROL® TABLETS Tranquilizer—Antidepressant

**Before prescribing, please consult complete product information, a summary of which follows:**

**Indications:** Relief of moderate to severe depression associated with moderate to severe anxiety.  
**Contraindications:** Known hypersensitivity to benzodiazepines or tricyclic antidepressants. Do not use with monoamine oxidase (MAO) inhibitors or within 14 days following discontinuation of MAO inhibitors since hyperpyretic crises, severe convulsions and deaths have occurred with concomitant use; then initiate cautiously, gradually increasing dosage until optimal response is achieved. Contraindicated during acute recovery phase following myocardial infarction.

**Warnings:** Use with great care in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur in patients taking tricyclic antidepressants and anticholinergic-type drugs. Closely supervise cardiovascular patients. (Arrhythmias, sinus tachycardia and prolongation of conduction time reported with use of tricyclic antidepressants, especially high doses. Myocardial infarction and stroke reported with use of this class of drugs.) Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving).

**Usage in Pregnancy:** Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Since physical and psychological dependence to chlordiazepoxide have been reported rarely, use caution in administering Limbitrol to addiction-prone individuals or those who might increase dosage; withdrawal symptoms following discontinuation of either component alone have been reported (nausea, headache and malaise for amitriptyline, symptoms [including convulsions] similar to those of barbiturate withdrawal for chlordiazepoxide).

**Precautions:** Use with caution in patients with a history of seizures, in hyperthyroid patients or those on thyroid medication, and in patients with impaired renal or hepatic function. Because of the possibility of suicide in depressed patients, do not permit easy access to large quantities in these patients. Periodic liver function tests and blood counts are recommended during prolonged treatment. Amitriptyline component may block action of guanethidine or similar antihypertensives. Concomitant use with other psychotropic drugs has not been evaluated.

Sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy.

Limbitrol should not be taken during the nursing period. Not recommended in children under 12. In the elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects.

**Adverse Reactions:** Most frequently reported are those associated with either component alone: drowsiness, dry mouth, constipation, blurred vision, dizziness and bloating. Less frequently occurring reactions include vivid dreams, impotence, tremor, confusion and nasal congestion. Many depressive symptoms including anorexia, fatigue, weakness, restlessness and lethargy have been reported as side effects of both Limbitrol and amitriptyline. Granulocytopenia, jaundice and hepatic dysfunction have been observed rarely.

The following list includes adverse reactions not reported with Limbitrol but requiring consideration because they have been reported with one or both components or closely related drugs.

**Cardiovascular:** Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke.

**Psychiatric:** Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania and increased or decreased libido.

**Neurologic:** Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns.

**Anticholinergic:** Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract.

**Allergic:** Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus.

**Hematologic:** Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia.

**Gastrointestinal:** Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue.

**Endocrine:** Testicular swelling and gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female and elevation and lowering of blood sugar levels.

**Other:** Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, olopecia, parotid swelling.

**Overdosage:** Immediately hospitalize patient suspected of having taken an overdose. Treatment is symptomatic and supportive. I.V. administration of 1 to 3 mg physostigmine mesylate has been reported to reverse the symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.

**Dosage:** Individualize according to symptom severity and patient response. Reduce to smallest effective dosage when satisfactory response is obtained. Larger portion of daily dose may be taken at bedtime. Single h.s. dose may suffice for some patients. Lower dosages are recommended for the elderly.

Limbitrol 10-25, initial dosage of three to four tablets daily in divided doses, increased up to six tablets or decreased to two tablets daily as required. Limbitrol 5-12.5, initial dosage of three to four tablets daily in divided doses, for patients who do not tolerate higher doses.

**How Supplied:** White, film-coated tablets, each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt) and blue, film-coated tablets, each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt) — bottles of 100 and 500; Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25, and in boxes containing 10 strips of 10. Prescription Paks of 50.

## How to initiate and maintain therapy

### Select dosage strength appropriate for each patient

- ☐ Limbitrol 5-12.5 is recommended to minimize drowsiness and for elderly patients
- ☐ Limbitrol 10-25 may be indicated for patients who tolerate medication without undue side effects

### Specify daily dosage based on symptom severity

- ☐ An initial dosage of three tablets is recommended
- ☐ Dosage may be increased to six tablets or decreased to two tablets daily as necessary
- ☐ Once a satisfactory response is obtained, patients should be continued on the smallest dose required to maintain the desired effect

### Utilize dosage options to best accommodate individual patient needs

- ☐ T.I.D. or Q.I.D., familiar regimens most suited for patients who tolerate medication without undue drowsiness
- ☐ Two tablets one hour before bedtime and one tablet midday may minimize daytime drowsiness and help relieve a common target symptom — insomnia
- ☐ Entire dosage h.s. to take maximum advantage of the sedative effect

# Your guide to patient management... when you decide medication is needed

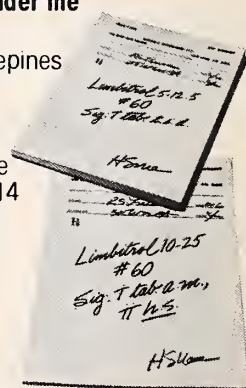
## How to make each patient an informed patient

1. Discuss with patients the probability that they will experience drowsiness, especially during the first week.
2. Reassure your patients that drowsiness is one indication that the medication is working and that it may help alleviate their insomnia.
3. Encourage patients to report if drowsiness becomes troublesome so that, if necessary, dosage schedule can be adjusted.
4. Caution patients about the combined effects with alcohol or other CNS depressants. Let them know that the additive effects may produce a harmful level of sedation and CNS depression.
5. Caution patients about activities requiring complete mental alertness, such as operating machinery or driving a car.
6. Warn pregnant patients and patients of childbearing age that the safety of Limbitrol in pregnancy has not yet been established.

Please see complete product disclosure for other pertinent information.

### Limbitrol should not be used under the following circumstances:

1. Hypersensitivity to benzodiazepines or tricyclic antidepressants.
2. Concomitantly with an MAO inhibitor. To replace an MAO inhibitor with Limbitrol, discontinue MAO inhibitor for a minimum of 14 days before cautiously initiating Limbitrol therapy.
3. During the acute recovery phase following myocardial infarction.



ROCHE PRODUCTS INC.  
Monro, Puerto Rico 00701

In moderate depression and anxiety

# Limbitrol®

Relief without a phenothiazine

# Month in Washington

Contending there is a "totally inadequate" national awareness of prescription drug abuse, the Director of the National Institute of Drug Abuse (NIDA) warned the problem could reach the magnitude of alcohol and tobacco as health hazards.

Federal officials estimated seven million Americans use legal drugs for non-medical purposes. William Pollin, M.D., NIDA Director, said misuse of prescription drugs is insidious and shows no signs of decreasing.

Dr. Pollin spoke at a Washington, D.C., conference sponsored by the federal drug agencies in conjunction with the American Medical Association, the Pharmaceutical Manufacturers Association and the National Association of State Alcohol and Drug Abuse Directors.

Pete Bensinger, Administrator of the Drug Enforcement Administration, said 250 million to 300 million dosage units are diverted each year. "A few physicians and pharmacists interested in illicit gain have caused a major national problem," he said. Federal investigators found one physician making \$200,000 a month from dealing in prescription drugs illegally, he said. One physician's desk drawer contained more than \$1 million in cash.

The government officials conceded they could not accurately estimate how much of the problem stems from crooked physicians and pharmacists and how much from theft, from "professional patients," or other means.

Joseph Skom, MD., chairman of the AMA Committee on Dangerous Drugs, said the most important task is continuing medical education of physicians on proper prescribing. The overwhelming majority of the problem is caused by a "small minority" of physicians, Dr. Skom told the conference.

The AMA has drafted model state legislation to crack down on physicians misconduct, he noted, with one-half of the states to date providing all or

part of the recommended code. Dr. Skom pointed to a six-fold increase in disciplinary actions against physicians since 1971, suggesting that this has helped in the fight against prescribing abuse. The AMA believes in "firm prosecution" of guilty physicians, he said.

---

## Digitalis

(Continued from page 13)

### Answers

1. a, b, c, d
2. False
3. a
4. d
5. a

### References

1. Lely, A. H. and Van Enter, C. H.: Noncardiac symptoms of digitalis intoxication. *Am. Heart J.* 83:149-151, 1972.
2. Beller, G. A. *et al.*: Digitalis intoxication: A prospective clinical study with serum level correlations. *N. Engl. J. Med.* 284:989-997, 1971.
3. Chung, K.: *Digitalis Intoxication*. Baltimore, Williams & Wilkins, 1969.
4. Castellanos, A.; Ghafour, A. and Soffer, A.: Digitalis-induced arrhythmias: Recognition and therapy. *Cardiovasc. Clin.* 1:108-127, 1969.
5. Lely, A. H. and Van Enter, C. H.: Large scale digitoxin intoxication. *Br. Med. J.* 3:737-740, 1970.
6. Batterman, R. C. and Gutner, L. B.: Hitherto undescribed neurological manifestations of digitalis toxicity. *Am. Heart J.* 36:582-586, 1948.
7. Shear, M. and Sacks, M.: Digitalis delirium: Psychiatric considerations. *Int. J. Psychiatry Med.* 8(4):371-381, 1978.
8. Kelton, J. G. and Scullin, D. C.: Digitalis toxicity manifested by dysphagia. *JAMA* 239:613-614, 1978.
9. Bernat, J. L. and Sullivan, J. K.: Trigeminal neuralgia from digitalis intoxication. *JAMA* 241:164-166, 1979.
10. LeWinn, E. B.: Gynecomastia during digitalis therapy, report of eight additional cases with liver function studies. *N. Engl. J. Med.* 248:316-320, 1953.
11. Navab, G.; Koss, L. and LaDue, J.: Estrogen-like activity of digitalis, its effect on the squamous epithelium of the female genital tract. *JAMA* 194:142-144, 1965.



# AMA News

**AMA paid membership topped** the 1979 year-end figure, reaching 194,781 on Nov. 7. This is an increase of 2,681 over the 192,100 total for the entire year of 1979. Dues-paying membership was running 4,059 ahead of the 190,722 figure for the same date last year. With almost two months still to go in 1980, the number of regular members was 153,109, an increase of 1,509 over the 151,600 at the end of 1979. Resident and student memberships continue to rise. On Nov. 7 resident members numbered 20,605, compared to 20,083 at the same time last year. Student membership stood at 21,067, compared to 20,070 on the same date in 1979. Dues-exempt membership was 34,787, up from 33,137 at this time last year. "The figures are gratifying, but there is no cause for elation," said AMA EVP James H. Sammons, M.D. "Membership is up in all categories, but it takes an additional \$5.5 million in the AMA budget to make up for inflation." Total membership, including dues-exempt, was 223,000 at the end of 1979. So far this year the total is 229,568.

**The 1981 National Leadership Conference** will feature health economists Victor Fuchs of Stanford U. and Walter Heller, former chairman of the President's Council of Economic Advisors and current economics professor at U. of Minnesota. Political journalists Hugh Sidney, Elizabeth Drew, and Joseph Kraft will give an election overview and political projections for the 80s. The 1981 NLC will be Feb. 12-14 at the Downtown Chicago Marriott Hotel. The theme is "Trying Is Winning: It Starts With You." Registration fee is \$150. For more information contact Linda Hudson, AMA Headquarters (312) 751-6716.

**AMA Regional Scientific Meetings** enter their sixth successful year in 1981. Some new aspects to next year's interdisciplinary sessions are dermatology courses for non-dermatologists and a special meeting honoring the bicentennial anniversary of the Massachusetts Medical Society. Dates and locations for the 1981 meetings are March 27-29, Williamsburg, Va.; April 3-5, Chicago; May 27-31, Dallas; June 12-14, San Francisco; Sept. 19-20, Philadelphia; Oct. 12-16, Honolulu; Oct. 16-18, Huron, Ohio; Oct. 23-25, New York City; Oct. 30-Nov. 1, Sarasota, Fla. and Boston; and Nov. 15-18, New Orleans. For more information contact the Division of Continuing Medical Studies, AMA Headquarters.

**The only provision affecting physicians' offices** in the final regulations for health planning amendments is a certificate-of-need requirement for purchase of equipment costing more than \$150,000 if the equipment is to be used primarily by hospital inpatients. An attempt in Congress to broaden the physicians' office provision to include all expensive equipment was defeated last year following a strong protest by the AMA.

**An AMA action program on cost effectiveness** will begin in early 1981. The program will stress promotion of state, county and specialty society cost containment efforts; documentation of the impact of these medical society projects; and increased dissemination of information. In the spring, the AMA will host a workshop conference at which national medical specialty societies will develop projects aimed at their particular constituencies. The AMA will develop medical staff projects which will be evaluated through a network of about 75 hospitals. A packaged program of health information and education will be distributed to medical societies and four pamphlets will be published to assist the public in becoming cost conscious. As part of the program, other segments of the health care industry — the American Hospital Assn., Federation of American Hospitals, Blue Cross and Blue Shield Assns., and the Health Insurance Assn. of America — have joined the AMA to form a working group to implement selected recommendations of the National Commission on the Cost of Medical Care.

**Five new AMA video clinics** have been developed, making the total number of programs 15. The five new ones are Acute Gastrointestinal Bleeding, Antibiotic Therapy in Office Practice, The Depressed Patient, Bronchial Asthma, and Alcoholism: Early Diagnosis and Management. The clinic programs, which are designed to make continuing medical education convenient and inexpensive for busy physicians, may be rented or purchased. Each of the two- to six-hour courses includes color videotapes, self-assessment tests, and illustrated study guides. The courses meet the criteria in Category 1 for the AMA Physician's Recognition Award. For more information contact the Dept. of Marketing Communications, AMA Headquarters (312) 751-5951.

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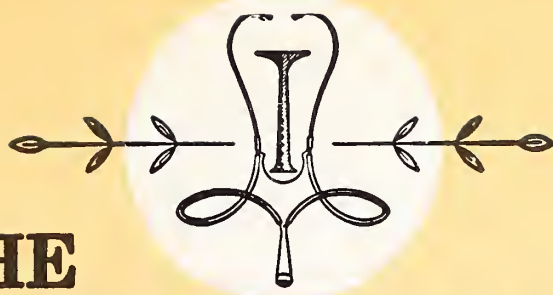
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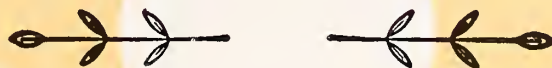
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# AMA House of Delegates

## *Summary of Actions taken at the 1980 Interim Meeting, San Francisco*

The 1980 Interim Meeting of the American Medical Association was held on December 7-10 at the Hilton Hotel in San Francisco. The Kansas Medical Society was officially represented by Philip A. Godwin, M.D., President; two delegates and their alternates (the undersigned); and Jerry Slaughter, Executive Director. Also present from Kansas was William J. Reals, M.D., Wichita, representing the American College of Pathology.

The overall mood of the House was optimistic, buoyed by the results of the national elections. The House Sessions were generally free of controversy as the delegates assumed a "wait-and-see" attitude in anticipation of the new administration in Washington.

While the House considered 69 reports and 86 resolutions on a broad range of issues, those of major interest were the following:

### **Professional Standards Review Organizations**

After much discussion and a close vote, the House approved a restated AMA position on PSRO. The shift in policy apparently reflected a significant grassroots dissatisfaction with PSRO and its failure to achieve the stated goals of improving the quality of care. The delegates voted to "encourage the elimination of all government-directed peer review programs including PSRO."

### **Health Planning Laws**

In a similar vein, the delegates stiffened their opposition to federal regulation in health care stemming from public law 93-641, the National Health Planning Resources Development Act.

The House took action calling for the AMA to support immediate cessation of funding for the health planning law and cause repeal legislation to be introduced into the next Congress. The AMA will call upon the state medical associations for assistance in passing this legislation. The House also said that HMOs should not be exempted from equal application of the health planning laws, but the policy statement also called on the AMA to develop principles for a program of voluntary, locally-based health planning designed to address local needs with local resources.

### **Women Physicians in Organized Medicine**

After a year of work, including a comprehensive scientific survey of women physicians' attitudes, the Ad Hoc Committee on Women Physicians in Organized Medicine submitted its recommendations.

Among the several recommendations, one calling on the Association to endorse the Equal Rights Amendment generated the most discussion. The Board's position was opposed to ERA endorsement on the grounds that this was a political, rather than a medical issue. Most House members agreed. However, the members of the Ad Hoc Committee pointed out that 85 per cent of the women physicians would like for the Association to support the amendment.

The matter was then referred back to the Board with the House asking the trustees to give priority attention to: (1) Employment of a full-time AMA staff person to coordinate activities associated with the special interests and concerns of women physicians; and (2) appointment of a three-year committee to monitor the progress of women's participation in organized medicine.

The House will hear a report on these issues at the 1981 annual meeting.

### **Graduate Medical Education**

In response to a major effort of the resident physician section, the House delayed approval of new guidelines for accrediting graduate medical education. The AMA now represents more than 20,000 resident members.

The resident physicians reported that the proposed revision in the *Essentials of Accredited Residencies in Graduate Medical Education* would dilute the original standards and weaken their position in graduate training programs.

The *Essentials* will remain in effect in its present form for the time being, while the Board of Trustees will reopen negotiations with the other parent bodies of the Liaison Committee on Graduate Medical Education (LCGME) concerning the proposed revision on dealing with house-staff rights, privileges, and responsibilities.

*(Continued on page 43)*



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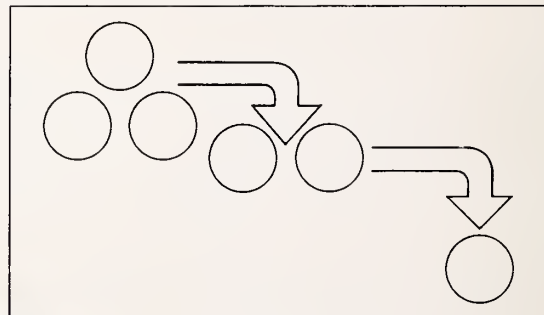
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**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma, may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication, abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice, periodic blood counts and liver function tests advisable during long-term therapy.

## Membership and Finances

The 1981 budget calling for anticipated revenues and expenses of \$69 million was approved. A dues increase at the 1981 annual meeting is a strong possibility. A dues increase had been postponed for a year mainly due to sound financial management. Compared to 1974, when the AMA was borrowing about \$1 million a month to meet its payroll, today the organization has a net worth of \$67 million and is in strong financial condition.

However, there is a prevailing concern among the delegates that revenues from AMA memberships have not kept pace with the impact of inflation on the Association's expenses. Only a dramatic increase in membership would avert the necessity for a dues increase.

All of us need to do more to increase AMA membership. Ask your colleagues if they belong and encourage them to commit themselves to supporting the only national association that speaks to the interests of physicians.

AMA House meetings provide a unique educational opportunity and we encourage you to attend and participate. Any member of AMA may present testimony at reference committee hearings and, of course, corridor discussions on the issues provide ample opportunities to get your views across. However, if you cannot come to the meeting, you can be represented through your delegate. Please let us know your opinions. You can also prepare a resolution and request that it be submitted to the House. Many AMA policies began with an individual physician who had a good idea and coaxed it through the democratic process.

Please let your delegation members know your views on issues that affect your practice so that we can bring your thoughts to the House. Also, today, call your colleague who is not a member of AMA and convince him/her of the necessity to support the AMA through membership. The Association is already working for him/her.

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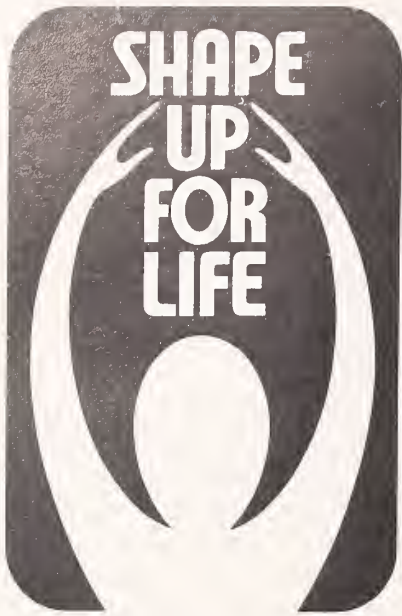
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# A U X I L I A R Y N E W S

## *An Open Letter to Kansas Physicians*

February is National Heart Month which is appropriate since St. Valentine's Day is also in February. Of course you know this, but did you know that the first woman doctor was born February 3, 1821? Her name was Elizabeth Blackwell. Today there are many women in the medical profession, and we salute each of them with a special Happy Valentine's Day wish.

The KMS Auxiliary began as an organization for wives of physicians. A few years ago a change of one word in the bylaws from "wife" to "spouse" made it possible for husbands of physicians to join. A few men have joined the Auxiliary and we are happy to have them.

Our organization is not a tea, bridge, or fashion show group. We are concerned about people. We have explained the Shape Up For Life programs, which are concerned with nutrition and exercise for good health, and about AMAERF to help medical students. We also have a Memorial Loan Fund from which loans are available to students in allied medical fields. This fund is sustained by donations made in memory of an Auxiliary member or friend. Several students have received loans this year.

Three wives of physicians are now serving in the Kansas Legislature — one in the Senate and two in the House of Representatives. Auxiliary members work on political action committees. We are concerned with good medical care through proper legislation. Auxiliary members will visit the Legislature for one day during the current session.

International Health is an organization devoted to helping those who are less fortunate. Medicine, medical equipment, glasses, books, clothing, and other useful items are collected by members and shipped all over the world as well as to some areas of the United States. Our members are involved in many community projects throughout the state. We are involved because we care.

*Evelyn Huff,*

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tion-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions) reported following discontinuation of the drug.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy. Advise patients to discuss therapy if they intend to or do become pregnant.

As with all anticholinergics, inhibition of lactation may occur.

**Precautions:** In elderly and debilitated, limit dosage to smallest effective amount to preclude ataxia, oversedation, confusion (no more than 2 capsules/day initially; increase gradually as needed and tolerated). Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider pharmacology of agents, particularly potentiating drugs such as MAO inhibitors, phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions reported in psychiatric patients. Employ usual precautions in treating anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation reported very rarely in patients receiving the drug

and oral anticoagulants; causal relationship not established.

**Adverse Reactions:** No side effects or manifestations not seen with either compound alone reported with Librax. When chlordiazepoxide HCl is used alone, drowsiness, ataxia, confusion may occur, especially in elderly and debilitated; avoidable in most cases by proper dosage adjustment, but also occasionally observed at lower dosage ranges. Syncope reported in a few instances. Also encountered: isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent, generally controlled with dosage reduction; changes in EEG patterns may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice, hepatic dysfunction reported occasionally with chlordiazepoxide HCl, making periodic blood counts and liver function tests advisable during protracted therapy. Adverse effects reported with Librax typical of anticholinergic agents, i.e., dryness of mouth, blurring of vision, urinary hesitancy, constipation. Constipation has occurred most often when Librax therapy is combined with other spasmolytics and/or low residue diets.

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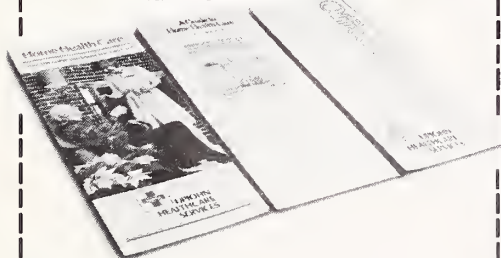
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**THE TRUTH ABOUT SENILITY — And How to Avoid It, by Lawrence Galton. Thomas Y. Crowell, New York, 1979. 244 pages. \$9.95.**

Senility is *not* a natural accompaniment of aging — or even inevitable. Real senility does exist but is far less common than popularly supposed, and is actually an irreversible brain disease that can strike even the middle-aged. But the term senility has become a catch-all phrase that covers impairments that are reversible and avoidable, if properly diagnosed and treated.

Much so-called senility — confusion, disorientation, forgetfulness, and apathy — can be helped by diagnosing and treating such causes as overmedication, hyperlipidemia, vitamin imbalance, depression, even water on the brain. Changes do occur with aging. Some years ago the disconcerting discovery was made that we lose 50,000 neurons from the brain every day. The numbers lost and those remaining are not nearly so important as the number actually used. Physical changes occur — the wrinkling skin, the graying hair, presbyopia, possibly with cataracts, loss of hearing acuity, even diminished sense of smell and taste can be very real. Women shrink in stature and men in physical strength in later years. Lung function declines with age. Much remains to be learned about the effects of aging on the digestive system. Drugs are handled differently in the systems of elderly patients, possibly because of changes in metabolism. Sleep patterns change with age, with older people taking longer to fall asleep, sleeping more lightly and awakening more frequently.

Mr. Galton's clear message is that changes associated with aging should not be labeled "senility" and assumed to be irreversible and unavoidable. Interesting and hopeful studies are being carried out on the treatment of circulatory disorders affecting the brain. Any condition that interferes with normal flow of blood to the brain or with oxygen richness of the blood should be investigated thoroughly since mental deterioration can result, as well as physical

suffering. Conditions such as congestive heart failure, heart rhythm abnormalities, anemia, polycythemia, and inflammatory artery disease are all considered controllable or can at least be alleviated. A chapter on control of hypertension suggests the absolute necessity of its treatment to avoid stroke, heart attack, and kidney problems. Another chapter on "Solving the Gland Problems" suggests that abnormalities produced by the thyroid and adrenal glands may be confused with symptoms of "senility."

Depression, an ailment so common a National Institutes of Health survey shows as many as eight million Americans suffer from it to varying degrees, is prevalent in the older population. Declines in physical vigor, mental agility and income, and loss of loved ones are all contributing factors. Depression in the elderly is difficult to diagnose but treatment can often be rewarding and effective. One intriguing method reported on for treatment of depression in the elderly is sleep deprivation. In this procedure patients are kept awake under medical supervision for 36 hours. The authors of the report say, "Although it is no miracle, it does look promising." Lithium and electroshock are also briefly discussed. Depression should be suspected when reactions to physical problems seem out of proportion or when a prevailing mood of giving up, pessimism, and self-deprecation is present.

A chapter on drug-induced pseudosenilities again stresses extreme caution in prescribing drugs for the elderly and a complete cessation of all medication when a thorough neurological evaluation reveals no cause for a progressive dementia. Patients more than 65 years old are in much greater danger of unfavorable drug reactions than younger people taking the same doses. "Drugs seem to have a mind of their own when they get into the bodies of older people," says the author. Drugs are usually tested on younger patients taking only one medication at a time while many elderly patients may take multiple medications for several symptoms. The importance of ascertain-

*(Continued on page 48)*



# Vox Dox

Vox Dox Editor:

Zacharias and Marsh, in their recent article "Jogging" (*The Journal*, December 1980), rightly point out the importance of serious injury such as stress fractures that may be experienced by long distance runners. However, I take exception to the characterization that these authors make. They describe the runner as a "lonely figure, struggling along the road with a grim, unsmiling countenance, gasping for breath." Certainly some runners at times may push themselves very hard; but it is also true that the vast majority of runners gain tremendous psychological and physical benefit from their activity. I would suggest that the authors spend some time at the roadside observing the appearance and countenance of motorists as they drive home during the rush hour. Joggers often wave or smile, but it is unusual to see a significant number of motorists doing so. Blaring horns and angry turns are all too frequent for all of us as we head for home at the end of the day. These phenomena must represent an effect of modern life, not our means of transportation. I would suggest that the process of running allows many people to vent physical and psychological emotion without infringing upon their fellow travelers.

CHARLES R. KING, M.D.  
Dept. of Gynecology & Obstetrics  
UKSM-KC  
39th & Rainbow Blvd.  
Kansas City, KS 66103

Vox Dox Editor:

I feel compelled to respond to the authors of "Jogging — A Nontraumatic Exercise?" (*The Journal*, December 1980) for four reasons.

1. Aerobic exercise, when properly prescribed, is of great benefit to an individual's health status. The medical profession must become aware of the benefits and risks involved in exercise programs — especially the much popularized aerobic programs such as walking, jogging, cycling, swimming, cross country skiing, etc. The fitness explosion has arrived, and I feel it is a healthy step toward an improved cardiopulmonary fitness that many people are now achieving. When a person's general medical condition, previous illnesses and injuries, as well as preferred activities are used to prescribe an exercise program, the benefits of aerobic programs are undeniable. They are more likely to increase compliance

with reasonable exercise activities meant to last a lifetime.

2. Our responsibility as physicians is to prevent serious injury to our patients caught up in the fitness explosion. We must become aware of the potential hazards involved in trying to attain and maintain a certain level of fitness. Femoral neck stress fractures represent a small but reportable percentage of the numerous overuse injuries which overzealous fitness buffs may sustain. Individuals participating in fitness programs must be aware of the three most important factors in prescribing a training program — *intensity, duration, and frequency*. Each variable must be monitored to attain maximal cardiopulmonary benefit and reduce the risk of overuse injuries.

3. Physicians should be aware of the following variables that may be directly or indirectly responsible for injuries in jogging:

*Running shoes* have received much publicity during the past several years. The result has been a great improvement in the quality of footwear that runners now enjoy. However, many will choose to use shoes that are not meant for long distance training, and others will continue to use shoes long after the support structures have deteriorated. This predisposes to a variety of runner's injuries.

Details of an *individual's training program* must include the running surface being used. Grass would be preferable to hard surfaces except that unevenness increases the risk of ankle injury. Therefore, most runners are forced onto the asphalt and concrete of the streets.

*Flexibility exercises* are frequently overlooked in activity programs. Many programs emphasize strength, power, speed, and endurance. Time for warming up and cooling off should be a part of any training program, primarily to control the cardiovascular response to exercise and to help prepare muscles and joints for activity.

These are just a few of the many variables studied by physicians interested in sports medicine.

4. My final point is a philosophical one. I may not cherish the idea of a long and hard training run, but I can't describe the feeling of accomplishment, the thrill in exploring new limits of previously unused body energy. How much better it feels to be a participant rather than a spectator, active rather than sedentary, fit and not fat. I believe it is unfair to label runners as psychologically antisocial. Most runners will describe an improved self-image, a constructive way to vent frustrations, and a significant mood elevation by participating in a relatively inexpensive form of entertainment. Jogging may not provide a thrill for everyone, but please don't attempt to de-

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*Editor's note:* The author is a third-year resident in Family Practice at UKSM-KC.

## Book Reviews

*(Continued from page 45)*

ing a complete history of medication before prescribing for an elderly patient is pointed out. The interactions of over-the-counter drugs and even with various foods are discussed. The patient should also be instructed on the proper time to take medication and whether with meals or on an empty stomach.

Some exciting studies on the effects of vitamin deficiencies on mental confusion are discussed in a chapter on "Overcoming the Deficiency — Triggered." The importance of minerals such as potassium, zinc, and magnesium is also being investigated. In a chapter called "And Still Other Correctables" the author is not very optimistic about treatment for arthritis but suggests "aggressive" treatment for emphysema. He also says it's "never too late to operate" and describes multiple surgeries on a 91-year-old man. The use of prescriptions for exercise seems to have advantages for any age while, of course, starting slowly and building cautiously with the elderly.

In the final chapter the author soundly condemns the practice of "condescension medicine" but pleads for "the right help when it's needed." The misguided, longheld notion that you can't do much for older people is gradually giving way to theories about how to improve the quality of their life. The next new frontier in pharmacy could be in "nootropic" or "mind activating" drugs which may have as much impact as tranquilizers did earlier.

Much research into the aging process is being conducted and an extensive bibliography of these reports is included. — A.R.B.



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**WARNING:** Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as a failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

**PRECAUTIONS:** As with other antibacterial preparations, prolonged use may result in overgrowth of non-susceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

**ADVERSE REACTIONS:** Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.



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nents alone is rare. (For a complete list of side effects reported with Limbitrol, please consult full disclosure.)

**References:** 1. Poulson GW. *NY State J Med* 79:193-195, Feb 1979. 2. Hollister LE. Antipsychotic medications and the treatment of schizophrenia, chap. 9, in *Psychopharmacology from Theory to Practice*, edited by Borchos JD, et al. New York, Oxford University Press, 1977, pp. 134, 145. 3. Domino EF. Antipsychotics: phenothiazines, thioxanthenes, butyrophenones, and rauwolfia alkaloids, chap. 25, in *Drill's Pharmacology in Medicine*, ed. 4, edited by DiPalmo JR. New York, McGraw-Hill Book Company, 1971, p. 476. 4. Sovner R, DiMascio A. Extrapyramidal syndromes and other neurological side effects of psychotropic drugs, in *Psychopharmacology: A Generation of Progress*, edited by Lipton MA, DiMascio A, Killam KF. New York, Raven Press, 1978, p. 1021. 5. Donlon PT, Stenson RL. *Dis Nerv Syst* 37: 629-635, Nov 1976.



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**Indications:** Relief of moderate to severe depression associated with moderate to severe anxiety.  
**Contraindications:** Known hypersensitivity to benzodiazepines or tricyclic antidepressants. Do not use with monoamine oxidase (MAO) inhibitors or within 14 days following discontinuation of MAO inhibitors since hyperpyretic crises, severe convulsions and deaths have occurred with concomitant use; then initiate cautiously, gradually increasing dosage until optimal response is achieved. Contraindicated during acute recovery phase following myocardial infarction.

**Warnings:** Use with great care in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur in patients taking tricyclic antidepressants and anticholinergic-type drugs. Closely supervise cardiovascular patients (Arrhythmias, sinus tachycardia and prolongation of conduction time reported with use of tricyclic antidepressants, especially high doses. Myocardial infarction and stroke reported with use of this class of drugs.) Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving).

**Usage in Pregnancy:** Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Since physical and psychological dependence to chlordiazepoxide have been reported rarely, use caution in administering Limbitrol to addiction-prone individuals or those who might increase dosage; withdrawal symptoms following discontinuation of either component alone have been reported (nausea, headache and malaise for amitriptyline, symptoms [including convulsions] similar to those of barbiturate withdrawal for chlordiazepoxide).

**Precautions:** Use with caution in patients with a history of seizures, in hyperthyroid patients or those on thyroid medication, and in patients with impaired renal or hepatic function. Because of the possibility of suicide in depressed patients, do not permit easy access to large quantities in these patients. Periodic liver function tests and blood counts are recommended during prolonged treatment. Amitriptyline component may block action of guanethidine or similar antihypertensives. Concomitant use with other psychotropic drugs has not been evaluated.

Sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy.

Limbitrol should not be taken during the nursing period. Not recommended in children under 12. In the elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects.

**Adverse Reactions:** Most frequently reported are those associated with either component alone: drowsiness, dry mouth, constipation, blurred vision, dizziness and bloating. Less frequently occurring reactions include vivid dreams, impotence, tremor, confusion and nasal congestion. Many depressive symptoms including anorexia, fatigue, weakness, restlessness and lethargy have been reported as side effects of both Limbitrol and amitriptyline. Granulocytopenia, jaundice and hepatic dysfunction have been observed rarely.

The following list includes adverse reactions not reported with Limbitrol but requiring consideration because they have been reported with one or both components or closely related drugs.

**Cardiovascular:** Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke.

**Psychiatric:** Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania and increased or decreased libido.

**Neurologic:** Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns.

**Anticholinergic:** Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract.

**Allergic:** Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus.

**Hematologic:** Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia.

**Gastrointestinal:** Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue.

**Endocrine:** Testicular swelling and gynecostasia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female and elevation and lowering of blood sugar levels.

**Other:** Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling.

**Overdosage:** Immediately hospitalize patient suspected of having taken an overdose. Treatment is symptomatic and supportive. I.V. administration of 1 to 3 mg physostigmine salicylate has been reported to reverse the symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.

**Dosage:** Individualize according to symptom severity and patient response. Reduce to smallest effective dosage when satisfactory response is obtained. Larger portion of daily dose may be taken at bedtime. Single h.s. dose may suffice for some patients. Lower dosages are recommended for the elderly.

Limbitrol 10-25, initial dosage of three to four tablets daily in divided doses, increased up to six tablets or decreased to two tablets daily as required. Limbitrol 5-12.5, initial dosage of three to four tablets daily in divided doses, for patients who do not tolerate higher doses.

**How Supplied:** White, film-coated tablets, each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt) and blue, film-coated tablets, each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt) — bottles of 100 and 500; Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25, and in boxes containing 10 strips of 10; Prescription Paks of 50.

## How to initiate and maintain therapy

### Select dosage strength appropriate for each patient

- ☐ Limbitrol 5-12.5 is recommended to minimize drowsiness and for elderly patients
- ☐ Limbitrol 10-25 may be indicated for patients who tolerate medication without undue side effects

### Specify daily dosage based on symptom severity

- ☐ An initial dosage of three tablets is recommended
- ☐ Dosage may be increased to six tablets or decreased to two tablets daily as necessary
- ☐ Once a satisfactory response is obtained, patients should be continued on the smallest dose required to maintain the desired effect

### Utilize dosage options to best accommodate individual patient needs

- ☐ T.I.D. or Q.I.D., familiar regimens most suited for patients who tolerate medication without undue drowsiness
- ☐ Two tablets one hour before bedtime and one tablet midday may minimize daytime drowsiness and help relieve a common target symptom — insomnia
- ☐ Entire dosage h.s. to take maximum advantage of the sedative effect

# Your guide to patient management... when you decide medication is needed

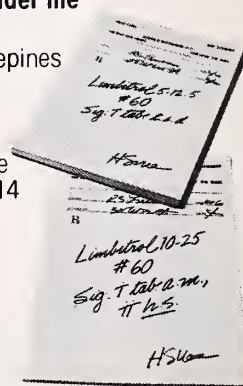
## How to make each patient an informed patient

1. Discuss with patients the probability that they will experience drowsiness, especially during the first week.
2. Reassure your patients that drowsiness is one indication that the medication is working and that it may help alleviate their insomnia.
3. Encourage patients to report if drowsiness becomes troublesome so that, if necessary, dosage schedule can be adjusted.
4. Caution patients about the combined effects with alcohol or other CNS depressants. Let them know that the additive effects may produce a harmful level of sedation and CNS depression.
5. Caution patients about activities requiring complete mental alertness, such as operating machinery or driving a car.
6. Warn pregnant patients and patients of childbearing age that the safety of Limbitrol in pregnancy has not yet been established.

Please see complete product disclosure for other pertinent information.

### Limbitrol should not be used under the following circumstances:

1. Hypersensitivity to benzodiazepines or tricyclic antidepressants.
2. Concomitantly with an MAO inhibitor. To replace an MAO inhibitor with Limbitrol, discontinue MAO inhibitor for a minimum of 14 days before cautiously initiating Limbitrol therapy.
3. During the acute recovery phase following myocardial infarction.



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# Head/Neck Carcinoma

## The Use of Radiation Therapy

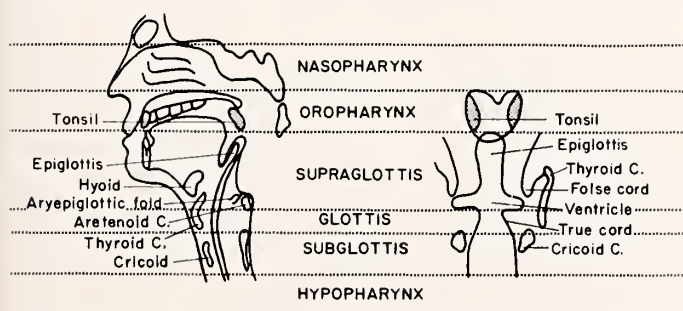
JUDITH STITT HAAS, M.D., *Detroit, Michigan, and*  
 CARL M. MANSFIELD, M.D., *Kansas City, Kansas*

MALIGNANT TUMORS of the upper air and food passages and their associated structures are known as "head and neck cancer." This general phrase actually implies several specific pieces of information with regard to anatomic structure and the histologic cell type of these cancers.

Anatomic sites of involvement by head and neck tumors are shown in *Figure 1*. They are: (1) oral cavity which includes the tongue and floor of the mouth; (2) mandible; (3) nasopharynx; (4) oropharynx including the tonsil and tonsillar fossa; (5) larynx and its subdivisions including the supra-

Modern radiation therapy plays an important role in the curative treatment of head and neck cancers, and in easing the symptoms of advanced disease. Use of high energy treatment machines, treatment planning techniques, electron beams, and interstitial implants gives the radiotherapist flexibility in providing sophisticated treatment for the patient with head and neck cancer. Various modalities of radiation therapy and their use in specific head and neck cancer are discussed.

From the Department of Radiation Therapy, University of Kansas School of Medicine



*Figure 1.* Anatomic sites of involvement by head and neck cancers.

glottic region comprised of the epiglottis, the arytenoid cartilage, the aryepiglottic fold, the false cord, and the ventricle; the glottis or true cord; and the subglottic area with the cricoid cartilage; and (6) hypopharynx which includes the pyriform fossa, the posterior pharyngeal wall, and the postcricoid region. The maxillary antrum and the middle ear are also included in discussions of head and neck tumors. Ninety-five per cent of head and neck cancers are squamous cell carcinoma; however, sarcomas, adenocarcinoma, lymphoma, and metastatic neoplasms may be found in this area. Head and neck neoplasms are relatively uncommon, constituting



only 5-6 per cent of all cancers occurring in men and women in the United States, yet these neoplasms have been of great importance to the radiotherapist in developing the art and science of radiation oncology. Some of the best results with curative radiotherapy have been in the treatment of head and neck tumors. Possibly the greatest single impact of megavoltage radiation therapy has been the impressive improvement in survival rates of patients with head and neck tumors treated for cure.<sup>1</sup>

### Use of Radiation Therapy

The use of radiation therapy in head and neck cancers can be grouped into three broad areas: (1) curative radiation using external beam therapy with or without radioactive implants; (2) pre-operative or post-operative radiation therapy; and (3) palliative radiation for advanced disease.

The choice of treatment for the individual patient is determined by the location of the tumor and the stage of disease in addition to the patient's age, general condition, nutritional status, and life style. Generally these patients are best served by management in a joint clinic so that a treatment plan can be formulated and instituted. Also, the patient can be repeatedly examined by all members of the team during treatment and followup.

*Curative radiation therapy* is designed to destroy all malignant cells that have reproductive capabilities in order to cure the patient while preserving the normal tissue and its functions. The stage of disease, the presence or absence of tumor containing lymph nodes, and the tumor location and tumor volume are factors that are considered when developing a plan for definitive treatment of carcinoma of the head and neck. To achieve the best chance of cure, the maximum tolerable dosage must be delivered to the tumor and surrounding tissues. The primary tumor site is treated to a high dose depending on the above variables. The areas of nodal drainage are treated depending on the tumor histology, site of origin, and nodal status.

Radiation therapy is used for curative treatment of lesions of the floor of the mouth, base of the tongue, and tonsil. The size and arrangement of the treatment fields depend on the location of the tumor and the tumor volume. For early lesions of the tonsil with no lymph node metastasis, a minimum dose of 6500 rads in six and one-half weeks should be delivered to the primary lesion, with a prophylactic dose of 5000 rads in five weeks to the upper neck nodes. If the neck nodes contain tumor, the dose to the neck must be increased to at least 6500 rads in six and one-half

weeks. Cure rates for small carcinomas of the tonsillar area are greater than 70 per cent at five years. Survival decreases as the size of the primary tumor increases and if the neck nodes are involved. For the same size primary lesion, the five-year survival is decreased by approximately one-half if lymph node metastases are present.<sup>2</sup>

Radiation therapy is the treatment of choice for early cancers of the vocal cord. Because of the sparse lymphatic drainage of the true vocal cord, the treatment portals are small — usually not exceeding 5X5 or 6X6 cms. A dosage of 6000 rads in six weeks to 7000 rads in seven weeks is used depending on the location and size of the tumor. The arrangement of the portals depends on the location and the extent of the disease. Computerized treatment planning is used to determine the most efficacious method of delivering a high dose of radiation to the tumor, while keeping the dose to normal tissues and critical structures low. An example of the distribution of radiation dosage as calculated by computerized treatment planning is shown in *Figure 2*. Complete tumor control is achieved in 90-95 per cent of the patients with tumor lesions treated with radiation therapy, while preserving the function of the larynx.<sup>3</sup> For patients who later have a local recurrence, a total laryngectomy can be performed with control of the disease in nine of ten patients.

Carcinoma of the nasopharynx has a tendency to invade locally with extension to the base of the skull, nasal cavity, or pharyngeal wall. Because of the rich lymphatic network, these patients commonly have metastatic nodal disease in the neck. These characteristics make complete surgical resection difficult; therefore radiation therapy is the treatment of choice for patients with cancer of the nasopharynx. The treatment volume includes the nasopharynx with generous margins that include portions of the ethmoid and maxillary sinuses, the entire sphenoid sinus, base of the skull, part of the oropharynx, and the retropharyngeal nodes. Treatment is delivered through multiple fields to a dose of 6000 rads in six and one-half to seven weeks. The upper and lower neck nodes are always irradiated even if nodal disease is not palpable. Patients with Stage I disease have a 50 per cent chance of cure.<sup>4</sup>

Patients with cancer of the maxillary sinus may present with dental symptoms since these cancers are frequently located in the inferior portion of the sinus adjacent to the dental roots. Surgical management includes biopsy for histologic verification of the cell type, and a palatal fenestration to provide drainage of the sinus and a means of evaluating tumor response. Definitive treatment of carcinoma

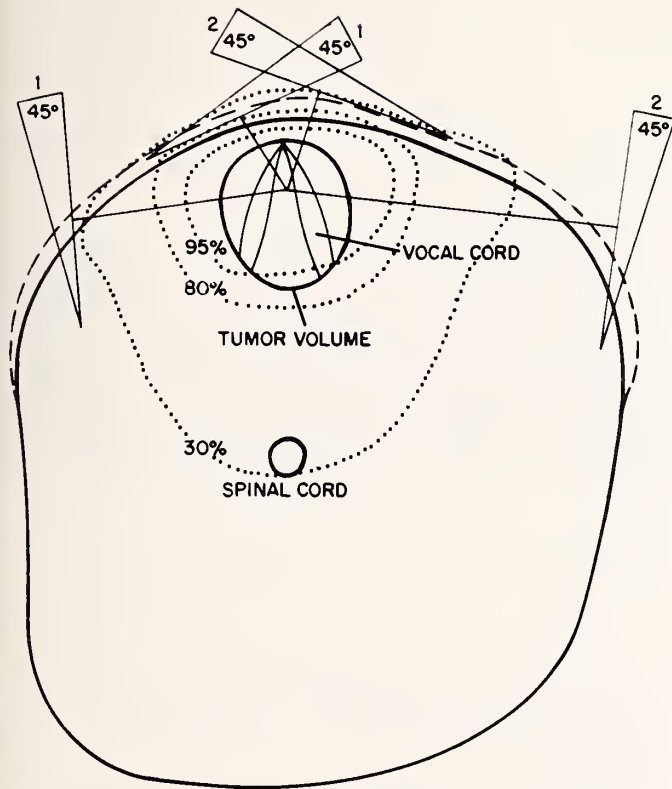


Figure 2. Computerized treatment plan for larynx carcinoma. The tissue volume surrounded by the 95 per cent isodose line will be treated to 7000 rads. The spinal cord receives about 30 per cent of the dose. Bolus material applied to the anterior neck raises the dose at the skin surface.

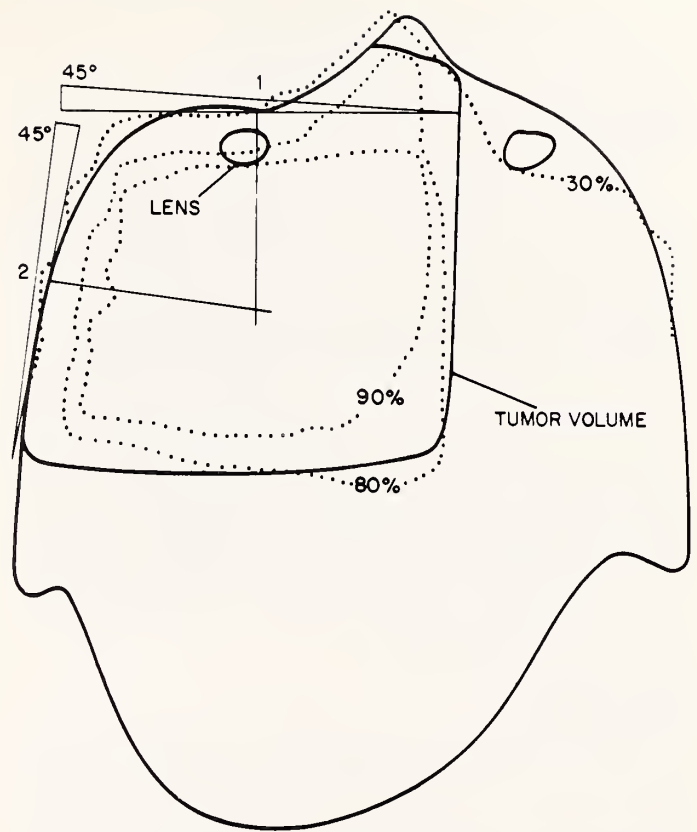


Figure 3. Computerized treatment plan for maxillary sinus carcinoma. The tissue volume surrounded by the 80 per cent isodose line will be treated to 6000 rads. The eye outside of the treatment field will receive less than 30 per cent of the dose.

of the maxillary sinus is with radiation therapy. The treatment portals should include all of the sinus and any adjacent area of tumor extension. Since this tumor does not usually spread to the local nodal drainage, the nodes are not treated prophylactically. A dose of 6000 rads in six weeks to 7000 rads in seven weeks is used depending on the extent of tumor involvement. Figure 3 shows the distribution of radiation dosage as calculated by computerized treatment planning. For patients with T<sub>1</sub> and T<sub>2</sub> lesions, the five-year survival is 60 per cent, while the survival for T<sub>3</sub> and T<sub>4</sub> lesions drops to 30 per cent.<sup>5</sup>

*Pre-operative radiation therapy* is based on the concept that local recurrence or distant metastases result from dissemination of cells from the actively growing peripheral region of the tumor. These cells have a good blood supply and are well oxygenated and therefore are more responsive to radiation therapy. Such cells can be destroyed by doses of radiation therapy in the range of 4500-5000 rads in four and one-half to five and one-half weeks without causing impairment of wound healing or normal

local tissue injury. The cells at the center of the tumor are poorly oxygenated cells and are less radiosensitive.<sup>6</sup> These cells are surgically removed after the pre-operative course of radiation. It is necessary that the surgery be performed by one experienced in the careful handling of irradiated tissues. Large primary tumors and those with extensive nodal involvement are best managed with a combined approach of maximum dosage radiation therapy followed by radical surgery.

*Post-operative radiation therapy* is best used in situations where surgery is felt to be incomplete, or where microscopic tumor is present at the surgical margin on histologic examination. It is important to know that preoperative radiation therapy does not necessarily prevent the use of post-operative radiotherapy for residual disease.

*Palliative radiation therapy* in head and neck cancer is used to relieve symptoms that are distressing to the patient. Usually the therapist tries to deliver a dose that is sufficient to control a specific symptom, such as bleeding, bone pain, or compressive symptoms from a tumor mass, and to deliver this dose



over a short enough period of time so as not to inconvenience the patient's life style.

### Side Effects

Since the structures of the head and neck are composed of a wide variety of tissues with various patterns of cellular proliferation, and since these normal tissues may be in close association with tumor bearing areas, reactions to radiation must be expected. These reactions may be acute or chronic. Acute mucositis with local redness and swelling cause soreness on swallowing. Decreased function of serous and mucin secreting glands may cause dryness of the mouth. Minor skin changes over the treated area are also an expected response to radiation. The duration and severity of these acute and chronic reactions depend upon the total dosage given, the volume of tissue treated, and the length of the course of treatment.

### Discussion

Patients with early stages of head and neck cancers ( $T_1$  and  $T_2$  lesions) can expect good survival with properly administered definitive radiation therapy. It is necessary to use high doses of megavoltage radiation given to carefully delineated portals to achieve good survival results. Frequently, external radiation is supplemented with implants of radioisotopes to deliver a high radiation dose to a local area. Such treatment must be carefully planned before treatment is started. This planning can be facilitated by computerized treatment planning.

Patients with more advanced disease ( $T_3$  and  $T_4$  lesions) have a poor prognosis. The results of surgery or radiotherapy alone have been unsatisfactory in producing control of local disease. Many physicians advocate the use of full dose radiation combined with definitive surgery for this group of patients to improve results of treatment.

Recent trials of radiation sensitizers — chemicals that enhance the action of radiation on cancer cells — have indicated that this may be an important development in radiation therapy of head and neck cancers, particularly large bulky tumors. Treatment with a combination of chemotherapy and radiation therapy may also be promising for this group of cancers.

### References

1. Lederman, M.: *Cancer of the Head and Neck* (Conley, J., Ed.). Butterworth, London, 1967.
2. Perez, C. A. and Ackerman, L. V.: Malignant tumors of the tonsil. *Am. J. Roentgenol. Radium Ther. Nucl. Med.* 114:43-58, 1972.
3. Wang, C. C.: Cancer of the larynx. *Radiology* 80:963-977, 1963.
4. Lederman, M.: *Cancer of the Nasopharynx, Its Natural History and Treatment*. Charles C Thomas, Springfield (IL), 1961.
5. Jesse, R. H. and Geopfert, H.: Squamous cell carcinoma of maxillary and ethmoid sinuses. *Proc. Natl. Cancer Conf.* 7:193-197, 1973.
6. Sutherland, R. M.: A multi-component radiation survival curve using air in vitro tumor model. *Int. J. Radiat. Biol.* 18:491-495, 1970.

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# Management of Angina

## *The Medical Approach*

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IN CORONARY artery disease, the myocardial oxygen supply is limited by coronary blood flow which, in turn, is limited by the severity of the coronary artery obstruction. When coronary blood flow is critically reduced, the oxygen supply to the myocardium is less than the myocardial oxygen demand, and myocardial ischemia occurs. This is often expressed clinically as angina pectoris. Medical therapy for angina is directed toward decreasing myocardial oxygen demand so that there is a more favorable balance between oxygen supply and demand.

### Clinical Anginal Syndrome

Heart rate, myocardial contractility, ventricular volume, and systolic blood pressure are the primary determinants of myocardial oxygen demand. Clinical situations that precipitate angina pectoris increase the myocardial oxygen demand by increasing one or more of these four physiologic variables. For example, exercise causes an increase in heart rate, systolic pressure and myocardial contractility, which increases myocardial oxygen requirement. Therefore, angina occurs typically during rather than after exercise, because the increase in heart rate, myocardial contractility, and systolic blood pressure plus myocardial oxygen requirement all increase during the period of effort. With the patient at rest, myocardial oxygen requirement decreases and angina is relieved.

Often angina develops at a predictable level of exercise when the heart rate and blood pressure reach a certain level; however, the exercise threshold for the development of angina varies widely in an individual patient. For example, emotional tension or excitement causes the discharge of catecholamines, resulting in increased heart rate, systolic blood pressure, and myocardial contractility. This, in turn, results in increased myocardial oxygen requirement, resulting in the occurrence of angina. Therefore, strong emotional stimuli may cause angina even when the patient is physically inactive. Since emotions are less easily controlled than the level of exercise, anginal attacks precipitated by emotional tension often are more prolonged than exercise-induced angina.

Exposure to cold increases myocardial oxygen

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**Coronary artery obstruction limits coronary blood flow resulting in decreased myocardial oxygen supply. When supply is less than demand, myocardial ischemia (angina pectoris) occurs. Medical therapy is directed toward decreasing myocardial oxygen demand to maintain a favorable balance with the oxygen supply available.**

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requirement by causing systemic vasoconstriction, a rise in systolic blood pressure, and tachycardia. For this reason, exercise tolerance is usually decreased in cold weather. After a meal, there is an increase in heart rate, which accounts for the decrease in exercise tolerance that occurs postprandially (*Table I*).

Nocturnal angina often indicates severe coronary artery disease. In some patients, this is related to periods of dream activity, which cause a sympathetic nerve discharge similar to that seen with emotional tension. In other patients, nocturnal angina may be due to an increase in venous return with recumbency, causing an increase in left ventricular volume and an increase in myocardial oxygen requirement. In this situation, nocturnal angina may be a symptom of left ventricular failure and may be relieved by therapy with diuretics and/or digitalis.

### General Measures

Patients with angina usually learn which activities precipitate pain. Often the activities can be completed without pain merely by allowing more time for completion of the task. Exercise during cold weather or after meals is more likely to precipitate angina. Although patients so affected should not exercise in the cold or after meals, they should be encouraged to remain as active as possible. Daily walking at a pace that does not produce angina promotes cardiovascular conditioning. A program of regular exercise may improve exercise tolerance by lowering the heart rate and blood pressure (and consequently the myocardial oxygen requirement) produced by a specific degree of exercise. A treadmill exercise test can help the physician by defining the exercise level, heart rate, and blood pressure at



TABLE I  
HEMODYNAMIC EFFECTS OF FACTORS  
PROVOKING ANGINA

<i>Factors</i>	<i>Heart Rate</i>	<i>Myocardial Contractility</i>	<i>Ventricular Volume</i>	<i>Blood Pressure</i>
Exercise	↑↑	↑		
Tension	↑↑	↑		↑↑
Exposure to cold				↑↑
Eating	↑↑			
Heart Failure (Nocturnal Angina)			↑↑	

Two arrows indicate a major hemodynamic effect and one arrow a minor effect. Arrows pointing upward in all columns also represent a rise in the myocardial oxygen requirement.

which symptoms occur and thus form a basis for prescribing an exercise program.

Both hypertension and smoking have other physiologic effects that are deleterious in the patient with angina. Hypertension increases the myocardial oxygen requirement and aggravates angina. Control of hypertension reduces myocardial oxygen requirement and often significantly improves the exercise tolerance of a patient with angina. The nicotine in tobacco causes an increase in heart rate and an increase in myocardial oxygen requirement. One effect of smoking is an alteration in the balance between myocardial oxygen supply and demand, which provokes angina; therefore, smoking should be prohibited in patients with angina pectoris.

Coexisting diseases can aggravate angina pectoris. Thyrotoxicosis and anemia both increase the myocardial oxygen requirement by increasing the resting heart rate. Appropriate treatment of these disorders is necessary for optimal management of angina.

In some patients, emotional tension is an important precipitating factor for angina. Although appropriate counseling may be helpful, most patients find it difficult to avoid tension-producing situations. The sympathetic nerve stimulation that results from tension can be treated centrally with tranquilizers or peripherally with  $\beta$ -adrenergic blocking agents. We prefer the latter.

### Pharmacologic Management

Nitroglycerin has been and continues to be the mainstay of the pharmacologic treatment of angina. Nitroglycerin, which acts as a vasodilator on both

the arterial and venous circulation, increases total coronary blood flow in normal individuals but not in patients with coronary artery disease. There is some evidence that nitroglycerin increases blood flow through coronary collateral vessels and may increase blood supply to ischemic areas of the myocardium by this mechanism. However, the primary beneficial effect of nitroglycerin is to decrease myocardial oxygen requirement rather than to increase myocardial blood flow. Nitroglycerin produces venous vasodilatation, peripheral venous pooling, and a decrease in venous return to the heart which reduces ventricular volume. Arterial vasodilatation leads to a reduction of arterial blood pressure; thus, nitroglycerin reduces preload and afterload. Although a reflex tachycardia may result from the reduced arterial pressure, the overall physiologic effect of nitroglycerin is to decrease myocardial oxygen requirement by decreasing systolic pressure and ventricular volume.

Nitroglycerin is administered sublingually in doses ranging from 0.3-0.6 mg. The onset of action usually occurs within one to two minutes, and relief of angina is usually prompt. Side effects include headache and postural hypotension. Since large doses of nitroglycerin may cause severe hypotension and a decrease in both myocardial and cerebral blood flow, only three nitroglycerin tablets should be taken during a 15-minute period. If the pain is not relieved, medical attention should be sought. Since the effects of sublingual nitroglycerin may persist for 30 minutes, it may be used prophylactically to prevent angina if it is taken just prior to activities that precipitate pain. In this manner, angina occurring during sexual activity or predictable emotional situations can be prevented.

The efficacy of long-acting nitrates is variable. Sublingual isosorbide dinitrate has hemodynamic effects similar to those of nitroglycerin. The duration of action is 20-60 minutes, which does not greatly differ from that of sublingual nitroglycerin. Orally administered nitrates must pass through the liver, where they are metabolized before reaching the systemic circulation. Therefore, effective systemic blood levels may not be reached with usual doses. Large doses of orally administered isosorbide dinitrate (20-50 mg) have been shown to have beneficial hemodynamic effects that persist for four hours. Nitroglycerin ointment applied to the skin has a duration of action of three to twelve hours. This form of therapy is particularly effective when used at night to relieve nocturnal angina. We usually start with an inch and adjust the dose as needed.

TABLE II  
HEMODYNAMIC EFFECTS OF MEDICATIONS IMPROVING ANGINA

<i>Factors</i>	<i>Heart Rate</i>	<i>Myocardial Contractility</i>	<i>Ventricular Volume</i>	<i>Blood Pressure</i>	<i>Overall Effect on Myocardial Oxygen Requirement</i>
Nitroglycerin	↑		↓↓	↓	↓
Propranolol	↓↓	↓	↑	↓	↓
Digoxin*		↑↑	↓↓		*
Diuretics			↓↓		↓

In all columns arrows pointing upward indicate effects causing an increase in myocardial oxygen requirement and arrows pointing downward indicate a decrease in myocardial oxygen requirement.

\* When heart failure and cardiomegaly are present, the effect of decreasing ventricular volume is greater than the effect of increasing myocardial contractility, and myocardial oxygen requirement is decreased. If the heart size is normal, Digoxin increases myocardial oxygen requirement.

Digitalis is an effective mode of therapy in patients who have both congestive heart failure and angina. Digitalis does increase myocardial contractility, which increases myocardial oxygen demand; however, when heart failure is present with cardiac enlargement, digitalis causes a decrease in heart size, and the net effect is a decrease in myocardial oxygen demand. Therefore, digitalis diminishes angina in patients with enlarged hearts but may aggravate angina in patients with a normal heart size (Table II).

Beta-adrenergic blocking agents such as propranolol have been a major advance in the management of angina pectoris. Propranolol decreases the myocardial oxygen requirement by decreasing both the heart rate and myocardial contractility. The heart rate response to exercise is affected by propranolol, so that at any given level of exercise, there is a relative bradycardia and a lower myocardial oxygen requirement. Patients with angina who are taking propranolol can do more exercise before the myocardial oxygen requirement exceeds the myocardial oxygen supply.

By decreasing myocardial contractility, propranolol can provoke congestive heart failure in certain individuals; therefore, the minimum clinically effective dose should be used. The resting heart rate can be used to adjust to propranolol dosage. The starting dose is usually 10 mg four times/day, which may be increased every four to seven days until the desired clinical response occurs or the resting heart rate is 50-55 beats/minute. The effective daily dosage of propranolol may range from 40-400 mg and must be individualized for each patient. Propranolol should

be used with caution in patients with congestive heart failure, but the combination of propranolol and diuretics may be helpful for patients with angina and congestive heart failure.

Propranolol may provoke bronchospasm in susceptible individuals, and its use is contraindicated in patients with asthma or severe chronic obstructive pulmonary disease. Since propranolol attenuates the sympathetic response to hypoglycemia, it should not be given to insulin-dependent diabetics, and it should not be discontinued abruptly as this may increase frequency and severity of angina and even precipitate myocardial infarction.

### Unstable Angina

The preceding discussion applies to the management of patients with stable angina pectoris — that is, when the duration, frequency, and severity of anginal attacks and the level of exertion provoking pain are relatively constant. Unstable angina is characterized by an increase in the frequency, duration, and severity of angina or new onset of angina. In this situation, angina often occurs at rest and may be nonresponsive to nitroglycerin. Unstable angina may precede the development of myocardial infarction; therefore, patients should be hospitalized in a coronary intensive care unit and kept at bed rest. Both nitrates and propranolol may be beneficial in the management of unstable angina. However, if symptoms have not improved within 24-48 hours, and if myocardial infarction has not occurred, coronary arteriography should be considered.

A bibliography of suggested reading is available from the author.



# Intractable Seizures

## *Review and Guide for Clinical Usage of Valproic Acid*

MARK EPSTEIN, M.D. and LILLIAN GONZALEZ-PARDO, M.D.,\* *Kansas City, Kansas*

VALPROIC ACID, the alpha-propyl substituted valeric acid, was synthesized as a byproduct, described, and reported in 1881 by Burton.<sup>1</sup> In 1963, while using it in a solvent mixture, Meunier<sup>2</sup> noted that various "prospective therapeutic agents" had a protective effect against metrazol-induced seizures in laboratory animals. He later found this decreased seizure activity to be related to the valproate-solvent mixture. Subsequently valproate was shown to reduce the incidence of audiogenic seizures in susceptible mice.

Valproate has been used and marketed in Europe, Japan, and South America for 10-12 yrs. Austin<sup>3</sup> reports that in 2000 patients with unselected seizure types, a 75 per cent or better response occurred in 45 percent of the patients. Twenty-five per cent had a drop in seizure frequency from 35-75 per cent.

Marketed under the trade name Depakene, valproic acid has been approved for general use in the United States since March 1978. Prior to that time, it was used only for investigational drug trials. The Food and Drug Administration recommendation regarding indications include intractable myoclonic and absence seizures, but may soon include other seizure disorders.

### Indications

Some consider valproic acid the drug of choice in infantile myoclonic seizures.<sup>4</sup> Several studies show unequivocally that valproate has more than placebo effect, especially in severe intractable epilepsy.<sup>5-8</sup> In line with recent evidence, valproate may prove to be the drug of choice for absence seizures (simple and complex) with various reports indicating 75 per cent or greater reduction in seizure frequency in 64-78 per cent of patients.<sup>9, 10</sup>

### Mode of Action

Presently there are three theories regarding the mode of action of this agent, which is a medium chain saturated fatty acid in contradistinction from the more common aromatic nitrogenated compounds of other anticonvulsants. Two theories involve gam-

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**Valproic acid, a relatively new anticonvulsant, may effect significant improvement in patients with intractable seizures, especially of the myoclonic or absence types in children. Possible adverse reactions include a potential for hepatotoxicity and pancreatic dysfunction. Side effects requiring discontinuation of the drug are rare. This review is a guide for physicians who may find this new anticonvulsant useful in their clinical practice.**

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ma-amino butyric acid (GABA), a neuroinhibitor. The first speculates that valproate's action is via competitive inhibition of GABA transaminase. The second speculates that valproate decreases GABA uptake at nerve ends, thus increasing its focal concentration. The third hypothesis, suggested by Lance,<sup>7</sup> involves a stimulator action of GABA that might cause increased neuron activity and a synchronization of non-specific reticulocortical projection (arousal system), and is based on the drug's most frequently reported central nervous system side effect: increased mental alertness.

### Pharmacokinetics

Valproate is protein bound approximately 90 per cent, 60 per cent of it to albumin. Serum half-life is reported to be 8-12 hrs. Peak plasma levels occur one to four hours following oral administration. Cerebral spinal fluid levels are about one-tenth that of serum. Eighty per cent of the drug is excreted via urine as the glucuronide. Very little drug is excreted unchanged. Valproate has been shown to cross the placenta in laboratory animals and is reported to be secreted in breast milk. Teratogenicity has been reported (also in laboratory animals) and most often involves skeletal abnormalities. The volume of distribution is 0.15-0.40 L/kg.<sup>11</sup>

### Dosage

The drug is available in syrup form, 250 mg/5 ml as sodium valproate, and as 250 mg capsules as valproic acid. Bioavailability of either form is prob-

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ably not different. The syrup is believed to be less likely to produce gastrointestinal symptoms, and may be preferred to the capsule if such effects occur.

In children, it is usually recommended that dosage begin at 15 mg/kg/day, increasing at one-week intervals by 5-10 mg/kg/day until seizures are controlled or side effects occur. The maximum recommended dosage has recently been increased from 30 to 60 mg/kg/day. It has been suggested that it be administered in divided doses because of the short half-life. A survey of several studies reveals an initial dosage range of 7.5-13.6 mg/kg/day increasing to a maximum of 42.0-62.5 mg/kg/day.<sup>12, 13</sup>

The usual dosage in adult patients is 500-1000 mg/day in divided doses. On a constant dosage of valproate, 1200 mg/day, adult patients with tonic clonic seizures achieved a reduction to 19 attacks during a six-week period vs 55 with placebo.<sup>5</sup> Recently Vajda has reported that rectal administration provides the same bioavailability as oral administration.<sup>14</sup> This form may be useful in "status" conditions, but must be prepared as the only available dosage forms are for oral administration.<sup>15</sup> There is limited experience in the rectal route.

The therapeutic levels are 60-100 µg/ml plasma.<sup>12</sup> The majority of patients will respond within three weeks of initiating therapy. If there is no response within four weeks, there probably is no advantage to continued therapeutic trial as a favorable response is unlikely. As drug utilization increases, the blood level determination should become less expensive; at present, most general laboratories do not have the capability for serum determinations. Relatively simple gas chromatographic methods for accurate determination of blood level have been reported.<sup>16, 17</sup>

### Contraindications and Warnings

The only known contraindication is hypersensitivity. Hepatic dysfunction has been reported in at least six cases, of which five were fatalities.<sup>18-23</sup> The survivor was receiving only one anticonvulsant (valproate) whereas the others were receiving various combinations.

Valproate is known to cause alterations in hepatic function tests. In a current study, moderately increased SGOT and SGPT were reported in four of 25 patients (16%).<sup>19</sup> Enzyme studies returned to normal with dosage reduction of 10 mg/kg. Sussmah and McLain report that the liver function abnormalities may be a direct, dose-related phenomenon. Thrombocytopenia has also been reported.<sup>21</sup>

More recently, pancreatitis associated with valproic acid has been reported.<sup>24, 25</sup> Appropriate pan-

creatic enzyme tests were done to establish the diagnosis in patients who presented with non-specific abdominal pain.

There are lesser effects of aplastic anemia, but no known effects of gum hypertrophy and hair overgrowth.

Reports of hepatotoxicity in children appear to be increasing since the drug was approved for general use. It is important to point out that during any drug's investigational use, data on infants and children are least available because of restrictions placed by most human experimentation committees in many centers for younger patients. Caution must always be exercised in any use of new drugs in this age group because of limited data available during the human investigational phase of any drug study. Valproic acid encephalopathy has also been reported recently.<sup>26</sup>

### Adverse Reactions

There are no known adverse reactions that prevent its usage. Adverse reactions occur in approximately 20 per cent of patients. These consist of gastrointestinal disturbances such as nausea and vomiting, which may be decreased by administration with food or milk; sedation and confusion have been occasionally reported. One study reported hair loss in 0.5 per cent of patients.<sup>9</sup> Interestingly, as noted previously, increased mental alertness is the most consistent side effect.

### Concomitant Anticonvulsants

The interaction between valproic acid and other anticonvulsant medications has been documented.<sup>24</sup> Concomitant administration of phenobarbital with valproic acid increases serum phenobarbital concentration, which necessitates reduction of oral phenobarbital dosage. With phenytoin, concomitant use with valproic acid resulted in decreased serum phenytoin concentrations. Conclusions about other anticonvulsants, such as primidone and carbamazepine, were less definite.

### Overdosage

Valproic acid is believed to be absorbed rapidly so gavage is of limited use. Treatment is supportive with maintenance of good urine flow.

### Summary

Valproic acid promises to be a breakthrough in the treatment of intractable myoclonic and absence seizures. These types of seizures most frequently occur in infants and children; therefore, this drug may be most often utilized in this patient population. These



same patients are also most likely to have been treated with other anticonvulsants. Children are less predictable than adults in their response to drugs, or combination of drugs. Investigational studies are often done in adults, and usually fewer drug trials are available for children. Caution must be exercised, therefore, in the use of any drug in infants and children. There is no doubt that valproic acid is effective in most cases of intractable myoclonic and absence seizures. However, adverse and toxic effects must be carefully monitored, especially during the first year of therapy when most of the reported serious hepatotoxic effects occur. We still know little about long-term effects and complications; thus we must not be negligent in monitoring such effects during a long period of time.

## References

1. Burton, B. S.: On the propyl derivatives and decomposition of ethyl acetoacetate. *Am. Chem. J.* 3:385-395, 1882.
2. Meunier, G. *et al.*: Propriétés pharmacodynamiques de l'acide n-dipropyl acétique. *Thérapie* 18:435-438, 1963.
3. Austin, W. H. and Thorn, H. E.: A brief review of valproate. *J. Maine Med. Assoc.* 69:226-227, 1978.
4. Jeavons, P. M. and Clark, J. E.: Sodium valproate in treatment of epilepsy. *Br. Med. J.* 2:584-586, 1974.
5. Richens, A. and Ahmad, S.: Controlled trial of sodium valproate in severe epilepsy. *Br. Med. J.* 4:225-226, 1975.
6. Barnes, S. E. and Bower, B. D.: Sodium valproate in the treatment of intractable childhood epilepsy. *Dev. Med. Child Neurol.* 17:175-181, 1975.
7. Lance, J. W. and Anthony, M.: Sodium valproate and clonazepam in the treatment of intractable epilepsy. *Arch. Neurol.* 34:14-17, 1977.
8. Hospital News: Consensus on valproic acid: A versatile anticonvulsant. *Hosp. Pract.* 38-45, November 1978.
9. Lewis, J. R.: Valproic acid (Depakene). *JAMA* 240:2190-2192, 1978.
10. Brown, L. W.: Valproic acid: A new antiepileptic agent. *Am. Fam. Physician* 19:166-168, 1979.
11. Schobben, F. *et al.*: Pharmacokinetics of dipropylacetate in epileptic patients. *Eur. J. Clin. Pharmacol.* 8:97-105, 1975.
12. Bruni, J. *et al.*: Clinical efficacy of valproic acid in relation to plasma levels. *Can. J. Neurol. Sci.* 5:385-387, 1978.
13. Pinder, R. M.; Brogden, R. N.; Speight, T. M. and Avery, G. S.: Sodium valproate: A review of its pharmacological properties and therapeutic efficacy in epilepsy. *Drugs* 13:81, 1977.
14. Vajda, F. J. E. *et al.*: Rectal administration of sodium valproate in status epilepticus. *Neurology* 28:897-899, 1978.
15. Barnes, S. E.; Bland, D.; Cole, A. P. and Evans, A. R.: The use of sodium valproate in a case of status epilepticus. *Dev. Med. Child Neurol.* 18:236-238, 1976.
16. Jakobs, C.; Bojasch, M. and Hanefeld, F.: New direct micro-method for determination of valproic acid in serum by gas chromatography. *J. Chromatogr.* 146:494-497, 1978.
17. Gyllenhaal, O. and Albinsson, A.: Gas chromatographic determination of valproate in minute serum samples after extractive methylation. *J. Chromatogr.* 161:343-346, 1978.
18. A call for caution with valproate. *Emergency Medicine* volume 64, August 15, 1979.
19. Willmore, L. J.; Wilder, B. J.; Bruni, J. and Villarreal, H. J.: Effect of valproic acid on hepatic function. *Neurology* 28:961-963, 1978.
20. Suchy, F. J. *et al.*: Acute hepatic failure associated with the use of sodium valproate. *N. Engl. J. Med.* 300:962-966, 1979.
21. Sussman, N. M. and McLain, L. W.: A direct hepatotoxic effect of valproic acid. *JAMA* 242:1173-1174, 1979.
22. Bowdel, T. A.; Patel, I. H.; Wilensky, A. J. and Confort, C.: Hepatic failure from valproic acid. *N. Engl. J. Med.* 301:435, 1979.
23. Donat, J. F. *et al.*: Valproic acid and fatal hepatitis. *Neurology* 29:273, 1979.
24. Batalden, P. B.; VanDyne, B. J. and Cloyd, J.: Pancreatitis associated with valproic acid therapy. *Pediatrics* 64:520, 1979.
25. Comfield, P. R. *et al.*: Pancreatitis due to valproic acid. *Lancet* 1:1198, 1979.
26. Sackellares, J. D.; Sook, Lee and Dreifuss, F. S.: Stupor following administration of valproic acid. *Epilepsia* 20:697-703, 1979.

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# Vaginal Reconstruction

## *Procedures Following Radical Pelvic Surgery*

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RADICAL SURGERY for pelvic malignancies often involves excision of the vagina and surrounding tissues, with loss of vaginal function. This creates the need for vaginal reconstruction in women desiring intercourse postoperatively. This report is a review of our recent experience with vaginal reconstruction following radical pelvic surgery.

### Material and Methods

During the period July 1974 to December 1978, ten patients treated surgically for pelvic malignancy by one of the authors underwent vaginal reconstruction. The records of these patients were reviewed for age, site of primary malignancy, previous surgical therapy, technique of vaginal reconstruction, interval between original surgery and vaginal reconstruction, and anatomical and functional results.

### Results

The distribution of patients by primary surgical therapy and technique of vaginal reconstruction is shown in *Table 1*.

Vaginal reconstruction by split-thickness skin graft (STSG) was performed in six patients following vaginectomy for intraepithelial carcinoma. In five, the graft was applied immediately following vaginectomy, and in one, 48 hrs after the procedure. The average operating time was 3.17 hrs. The grafts were taken from the posteromedial aspect of the thigh or buttock. A foam rubber mold covered by a condom was used to keep the graft in position. Removal of the mold and inspection of the graft were performed on the seventh postoperative day. In four patients this was carried out under sedation and in two under general anesthesia. Hospitalization ranged from nine to 15 days (mean 10.3 days). There were no operative or postoperative complications.

Satisfactory anatomical and functional results were obtained in four patients. In two of them (Cases 1 and 3), silver nitrate applications and a combina-

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**Radical surgery for pelvic malignancies often includes excision of the vagina and surrounding tissues, with loss of vaginal function. This creates the need for vaginal reconstruction in motivated women desiring vaginal intercourse postoperatively. A review of recent experience with vaginal reconstruction following radical pelvic surgery at the University of Kansas School of Medicine is presented.**

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tion of AVC and Dienestrol cream were used to promote reepithelialization of granulating areas. In another patient (Case 6), stenosis of the upper third developed as a result of infrequent use of the mold. However, she has reported satisfactory intercourse. Failure to use the mold and infrequent intercourse resulted in almost complete obliteration of the vagina in the remaining patient (Case 4). In this patient, dysplasia of the vault of the neovagina developed. This was treated by local excision.

Reconstruction of the vagina following anterior or total pelvic exenteration was performed in four patients. In two, a segment of sigmoid was used for such purpose at the time of the exenterative procedure; in the other two, a vulvovaginoplasty, according to the technique described by Williams,<sup>1</sup> was performed 17 and 18 months after the exenteration, respectively.

One of the two patients with sigmoid vagina (Case 9) has reported satisfactory intercourse. A vagina of adequate dimensions resulted. In the other patient (Case 8), a segment of sigmoid mucous fistula was used for vaginal reconstruction. The mucous fistula had been created five years previously at the time of diverting sigmoid colostomy for rectal stricture which had resulted from high dose (8200 R external irradiation and 48 hours radium insertion) pelvic irradiation. Slough of the upper third and fistula formation between the sigmoid vagina and remaining rectal stump occurred. The ultimate result was a scarred short vagina inadequate for satisfactory intercourse.

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TABLE I  
DISTRIBUTION OF PATIENTS BY ORIGINAL PROCEDURE AND TECHNIQUE OF VAGINAL RECONSTRUCTION

<i>Case</i>	<i>Age</i>	<i>Procedure</i>	<i>Malignancy</i>	<i>Technique of Vaginal Reconstruction</i>	<i>Time Since Surgery</i>	<i>Results/Comments</i>
1	62	Vaginectomy	Recurrent CIS of vagina	STSG	Concomitant	Satisfactory
2	48	Vaginectomy	Recurrent CIS of vagina	STSG	Concomitant	Satisfactory
3	41	Vaginectomy	Adenocarcinoma in situ of vagina	STSG	48 hours	Satisfactory
4	64	Vaginectomy	CIS of vagina	STSG	Concomitant	Failure to use the mold resulted in obliteration of upper $\frac{2}{3}$ of vagina
5	54	Vaginectomy	CIS of vagina	STSG	Concomitant	Satisfactory
6	42	Vaginectomy	Recurrent CIS of vagina	STSG	Concomitant	Stenosis upper third of vagina. Satisfactory
7	44	Anterior exenteration	Recurrent squamous cell carcinoma of cervix	Vulvovaginoplasty	17 mos	Anatomically adequate. Unsatisfactory intercourse.
8	36	Sigmoid colostomy and mucous fistula for rectal stricture Total exenteration	Recurrent squamous cell carcinoma of cervix	Sigmoid vagina	Concomitant	Slough of upper $\frac{1}{3}$ , resulting in stenosis. Unsatisfactory
9	29	Total exenteration	Recurrent squamous cell carcinoma of cervix	Sigmoid vagina	Concomitant	Satisfactory
10	24	Total exenteration	Recurrent squamous cell carcinoma of cervix	Vulvovaginoplasty	18 mos	Anatomically adequate. Unsatisfactory intercourse

Vulvovaginoplasty resulted in vaginal pouches of adequate dimensions in two patients. However, both have reported unsatisfactory intercourse. One developed intravaginal adhesions which required digital separation. Dilatations were used secondarily. Trauma of the upper edges of the pouch from intercourse occurred repeatedly in the same patient. The other patient required the use of a mold due to the tendency to stenosis. She died eight months later from pulmonary metastases. Both patients expressed dissatisfaction with the adjustment of coital position and need for lubrication. The operating time was 22 and 38 minutes, respectively. There were no operative or postoperative complications. Each patient remained in the hospital for five days.

### Discussion

Reconstruction of a functioning vagina following radical pelvic surgery may be considered in patients who express an interest in maintaining vaginal func-

tion postoperatively. The patient must be well motivated if satisfactory anatomical and functional results are to be obtained. Prognosis should be taken into consideration when palliative surgery has been performed. In addition, the use of a mold and dilatations, and the need for secondary procedures, if required, should be accepted by the patient.

Individualization of the surgical technique is necessary for each patient. The simplest procedure, associated with minimal morbidity, providing satisfactory results in most instances should be selected.

Vaginal reconstruction by the use of a split-thickness skin graft may be performed following vaginectomy,<sup>1, 2</sup> radical hysterectomy,<sup>3-5</sup> pelvic exenteration,<sup>1, 5-12</sup> and other pelvic operations.<sup>4, 13</sup> The use of a vaginal mold is necessary for at least six months or longer if no intercourse occurs. Failure to do so results in stenosis and obliteration of the vagina (Case 4). Satisfactory results have been obtained in most of the patients.<sup>1, 2, 6-8, 10</sup> Major complica-

tions have included prolapse of the vagina,<sup>8</sup> stenosis requiring surgical correction,<sup>3</sup> ileovaginal fistula,<sup>7</sup> and rectovaginal fistula.<sup>5</sup> A peritoneal graft, to separate abdominal and pelvic cavities at the time of pelvic exenteration, and gauze packing may be used if the application of a STSG is planned four to eight weeks postoperatively.<sup>8</sup> Dissection of the perineal tissues to create a space is necessary, prior to the application of the graft, when pelvic healing after exenteration is complete.<sup>5</sup>

Spontaneous reepithelialization of the vaginal canal following partial or total vaginectomy and pelvic exenteration may be expected.<sup>6, 14-16</sup> The use of a mold is mandatory and the application of a mixture of steroid and estrogen cream has been helpful.<sup>14</sup> Epithelialization is not complete until several months later,<sup>14</sup> and is accompanied by a copious, vaginal discharge. Incomplete reepithelialization and stenosis frequently occur.<sup>7, 17</sup>

If a supralelevator exenteration is performed, with preservation of the external genitalia and lower vagina, maintenance of vaginal function may be attempted by leaving the vaginal cuff opened and the use of a vaginal mold and estrogen cream postoperatively. A satisfactory functional vagina may be obtained.<sup>18</sup>

Vulvovaginoplasty, as described by Williams,<sup>19</sup> is a simple and safe procedure. Although not used routinely, dilatations may be necessary (Cases 7 and 10). This procedure has been employed for the correction of congenital absence of the vagina,<sup>19, 20</sup> and following radical hysterectomy<sup>21</sup> and pelvic exenteration.<sup>22, 23</sup> Schellhas and Fidler<sup>22</sup> have advised the application of a skin graft on the external surface of the vaginal pouch in patients with previous vulvar resection. They reported satisfactory results in two patients. Day and Stanhope<sup>23</sup> obtained optimal results in six of eight patients. One patient required surgical revision to lengthen the vaginal pouch and another required dilatation or surgical revision to widen the opening of the canal.

In our experience, vaginal pouches anatomically adequate for intercourse were obtained in both patients. However, both have expressed discontent and reported unsatisfactory intercourse. Adjustment of coital position and lubrication were necessary; stenosis developed in both patients. Although the procedure is simple and free of major complications, it may not be suitable for every patient.

Creation of a neovagina by the use of a segment of sigmoid has been described to correct congenital absence of the vagina<sup>24</sup> and following radical hysterectomy,<sup>25, 26</sup> vaginectomy,<sup>24</sup> and pelvic exenteration.<sup>24, 27</sup> The technique has been fully

described.<sup>24, 25</sup> As a rule, the use of a mold is not necessary, and a thick, mucoid discharge develops. Slough and stenosis have been reported in sigmoid vaginas performed in conjunction with a number of pelvic procedures.<sup>24</sup> Novak<sup>26</sup> reported one rectovaginal fistula and one pelvic abscess among 32 patients subjected to sigmoidovaginostomy following radical hysterectomy. Slough of the sigmoid vagina has occurred more frequently with the use of irradiated sigmoid.<sup>24, 27</sup> In one of our patients (Case 8), in spite of obtaining a tension-free sigmoid vagina, necrosis of the upper third occurred. This resulted in marked stenosis. This patient had received high dose pelvic radiation previously. Novak<sup>26</sup> has advised against the use of irradiated sigmoid for vaginal reconstruction. The morbidity and potential complications associated with isolating a segment of sigmoid colon make it difficult to justify this technique in those cases where the sigmoid has been undisturbed. The mortality rate in early series of patients with congenital absence of the vagina has been reported as high as 1-2 percent.<sup>28</sup>

Pedicle flaps — thigh skin flaps,<sup>29</sup> thigh myocutaneous flaps,<sup>30, 31</sup> gluteal skin flaps,<sup>32</sup> combined skin flaps<sup>33</sup> — may be useful for vaginal reconstruction in an occasional patient with a large perineal defect resulting from extensive pelvi-perineal surgery, particularly in those patients in whom the levator muscle system has been removed concomitantly with total exenteration and vulvectomy. The pedicles are useful to fill out the pelvic and perineal defect, and this may be effective in reducing the incidence of bowel complications<sup>30, 31</sup> as well as providing an anatomically and functionally adequate vagina. They may also serve a purpose for vaginal reconstruction in heavily irradiated patients.<sup>13</sup> Painful thigh scar,<sup>30</sup> multiple procedures,<sup>30, 32</sup> dyspareunia<sup>5</sup> of the flap<sup>30, 31</sup> have been reported associated with these techniques.

In conclusion, vaginal reconstruction may be considered in motivated patients desiring intercourse postoperatively and, preferably, in those with good prognosis. The technique should be individualized for each patient considering previous treatment, availability and condition of the tissues, and patient acceptance of postoperative implications. The simplest and safest procedure providing satisfactory results in most instances should be used. Better acceptance of radical procedures may be expected if preservation or restoration of vaginal function is offered to motivated patients.<sup>4, 5, 7, 9, 13, 33</sup>

References may be obtained from the author.



# Managing Refractory Hypertension

## *Assessing the Use of a New Antihypertensive Agent*

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MANAGEMENT of severe hypertension remains a perplexing therapeutic problem despite the development of many potent antihypertensive agents. Many individuals with mild hypertension (diastolic blood pressure approximately 90-100 mm Hg) will respond to a combination of dietary salt restriction and diuretic drug therapy.<sup>1, 2</sup> Patients with more marked hypertension may require the addition of an adrenergic blocking drug such as clonidine, methyl-dopa, metoprolol, propranolol, or a rauwolfia alkaloid (reserpine). When these measures do not adequately control the blood pressure it is presently recommended that a vasodilator drug, such as hydralazine, be added to the individual's regimen.<sup>1</sup> Some investigators favor the addition of vasodilator drugs at an earlier stage<sup>2-4</sup> since the major hemodynamic disturbance in most patients with chronic primary hypertension is abnormally high peripheral vascular resistance.<sup>5, 6</sup> Patients who do not respond adequately to maximally tolerated doses of conventional antihypertensive agents used in proper combination — diuretic drug with adequate dietary salt restriction, adrenergic blocker, plus vasodilator drug — are considered to have uncontrolled or refractory hypertension.<sup>7-14</sup> Severe target organ damage inevitably develops in such instances and can lead to the onset of congestive heart failure, cerebrovascular accidents, and central nervous system dysfunction or renal failure secondary to accelerated nephrosclerosis.<sup>7-9, 11-15</sup> Heretofore, some investigators have considered bilateral nephrectomy as the only alternative for those patients who do not respond adequately to drug therapy and have evidence of significant renal impairment and other target organ damage.<sup>7, 8</sup> However, recent studies indicate that minoxidil, a newly released, orally effective, direct

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**Minoxidil, an orally effective peripheral vasodilator drug, has recently been released for general use. Controlled clinical studies indicate that many patients refractory to maximally tolerated doses of conventional antihypertensive agents have responded to minoxidil therapy. Some of the major clinical trials assessing its use and effectiveness are reviewed.**

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acting vasodilator drug marketed under the trade name Loniten (Upjohn), may provide an additional option for those patients whose hypertension is refractory to the common antihypertensive drug regimens presently used.<sup>9-17</sup> This paper comparatively assesses some of the major clinical trials conducted with minoxidil, and includes the senior author's personal experience with the drug gained in the past three years during the final phases of clinical testing (Upjohn Company drug protocol 2703). Particular attention is directed toward an evaluation of minoxidil's metabolism and mechanism of action, clinical effectiveness, adverse effects, effects on prior target organ damage, and usefulness in the treatment of refractory hypertension.

### **Mechanism of Action**

Minoxidil is a piperidion-pyrimidine derivative with a chemical structure that is significantly different from hydralazine (*Figure 1*). Both drugs, however, act directly on the vascular smooth muscle.<sup>10, 13, 18</sup> The exact mode of action of direct-acting vasodilator drugs likely results from an interference with movements of calcium in the vascular smooth muscle cells which are responsible for the initiation or maintenance of muscular contraction. This inhibitor process may depend upon activation of the adenylate cyclase system with subsequent depletion of intracellular calcium in consequence of enhanced cyclic AMP generation.<sup>18, 19</sup>

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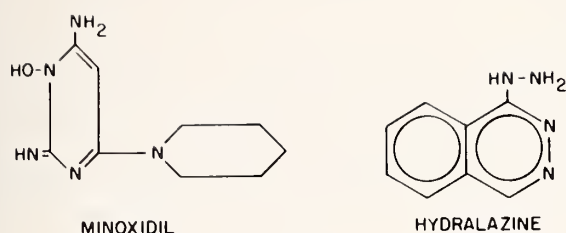


Figure 1. Comparison of the organic structures of minoxidil and hydralazine.

The effect of minoxidil, like hydralazine, is most pronounced at the arteriolar level which results primarily in a reduction in systemic vascular resistance without significant concomitant sympatholysis or enhanced venous capacitance.<sup>10, 13</sup> The reduction in peripheral arterial resistance that occurs with minoxidil is a compelling attribute of the drug since increased peripheral arterial resistance is the single most important and frequent hemodynamic finding in patients with chronic established hypertension, particularly those patients with renal insufficiency.<sup>5, 6, 15, 18</sup> Moreover, a decrease in arterial pressure due primarily to a decrease in peripheral resistance (so called "afterload" reduction) often results in an increased cardiac output, which can be a beneficial effect in patients with congestive heart failure and compromised cardiac outputs.<sup>2, 18, 20</sup> Minoxidil does not enter the central nervous system (CNS) in experimental animals in significant amounts, and it does not affect CNS function in man.<sup>21-23</sup>

## Metabolism

Minoxidil is rapidly and nearly completely absorbed from the gastrointestinal tract following oral administration; only about 10 per cent of standard doses is recovered in the feces.<sup>21, 22, 24, 25</sup> Peak plasma levels of the parent drug are obtained within an hour and decline rapidly thereafter. The average plasma half-life in man is about 4.2 hrs since 90 per cent of the administered parent drug is rapidly converted within the liver to less hemodynamically-active metabolites, primarily glucuronide derivatives.<sup>21, 22, 24</sup> The parent compound (10% of the usual dose) and the metabolic products are all excreted by the kidney via glomerular filtration.<sup>21, 22, 24</sup> Unlike hydralazine, minoxidil does not bind significantly to plasma proteins, and thus

the extent and time course of blood pressure reduction by minoxidil does not correspond closely to its concentration in plasma. However, blood pressure usually declines within one-half hour following an effective oral dose, and maximum antihypertensive effects are usually obtained within two to three hrs.<sup>21, 22, 24, 25</sup> The total duration of effect extends to 75 hrs in individuals with normal hepatic and renal function. The effect of liver disease on drug metabolism and biologic effect remains uncertain. Logic dictates careful monitoring. In patients with compromised renal function, sharp dosage reduction is usually not necessary since minoxidil is biotransformed primarily within the liver. In support of this theory, Keusch and associates<sup>9</sup> and Bryan and his colleagues<sup>16</sup> found that the active drug did not accumulate to as great a degree as anticipated in patients with renal insufficiency. In the absence of functional renal tissue, minoxidil and its metabolites can be removed by hemodialysis — an advantage of the drug when compared to hydralazine.<sup>26</sup>

It is important to remember that potent arterial vasodilator drugs induce compensatory cardiorenal responses that limit the effectiveness of these agents particularly when used alone as therapy for the hypertensive individual.<sup>2, 18, 20</sup> The baroreceptors of hypertensive patients respond to decreases in arterial pressure caused by drug-induced reduction of peripheral vascular resistance with an increase of sympathetic outflow. This results in tachycardia, increased myocardial contractility and a greater cardiac output, especially if venous capacitance is not increased by the drug and venous return to the heart is not diminished (Figure 2). The increased cardiac output alone can severely reduce the hypotensive effect of vasodilation.<sup>2, 18, 20</sup> Moreover, the increased cardiac rate and output increase cardiac

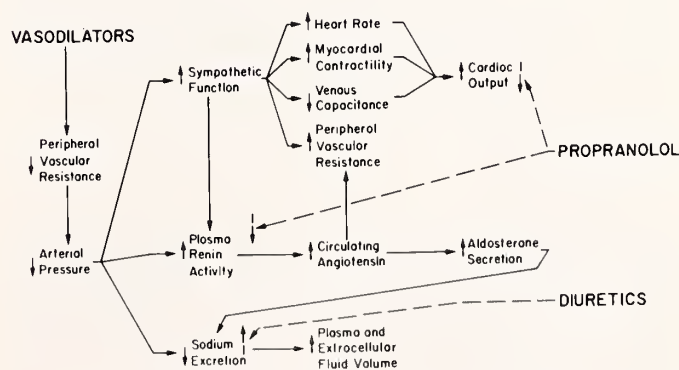


Figure 2. The usual compensatory cardiorenal responses to arterial vasodilation. Beta-sympathetic blockade with propranolol or metoprolol in conjunction with diuretic therapy is useful in obviating these responses.



work; this effect is poorly tolerated by patients with limited coronary and cardiac reserve.<sup>2, 16, 18, 20</sup>

The renal response to arterial vasodilation also serves to blunt the hypotensive effects of vasodilator drugs. As illustrated in *Figure 2*, when vasodilation occurs, increased amounts of the enzyme renin are generated and released into the circulation via the renal venous drainage — quite possibly as a result of the increased sympathetic outflow triggered by the arterial vasodilation.<sup>27, 28</sup> The increased plasma renin levels lead to increased generation of angiotensin I which is rapidly converted within the lung and kidney to angiotensin II which is a potent arterial vasoconstrictor substance and a potent secretagogue for adrenal aldosterone production.<sup>29, 30</sup> The increased levels of aldosterone that bathe the renal tubules and, quite possibly, the direct effect of increased sympathetic neural discharge upon renal tubules, result in augmented renal sodium absorption. Thus, increases in plasma and extracellular fluid volume occur in a setting of increased levels of potent vasoconstrictor substances (increased levels of norepinephrine and angiotensin II). These effects combine to return the blood pressure toward the original hypertensive level. Thus, it is imperative that a potent vasodilator drug, such as minoxidil, be given together with a drug that minimizes the reflex sympathetic stimulation of the heart ( $\beta$ -sympathetic blockers such as propranolol or metoprolol) and with potent diuretics that can interfere with the tendency for increased renal retention of salt (thiazides, furosemide, or ethacrynic acid).<sup>18, 20</sup> Without the addition of these drugs only minimal antihypertensive effects will be obtained; with them, excellent control of blood pressure can be obtained for prolonged periods of time. In those individuals who cannot tolerate  $\beta$ -sympathetic blockage — for instance patients with severe asthma or chronic obstructive pulmonary disease — clonidine or  $\alpha$ -methyldopa can be used to minimize the reflex tachycardia that often results with the initiation of minoxidil therapy.<sup>2, 15, 16, 31</sup>

### Clinical Trials

Several reports have been published regarding the effectiveness and side effects of minoxidil. Keusch and associates analyzed its use in 155 patients with severe hypertension.<sup>9</sup> Interestingly, more than half of these patients (57.8%) were taking four or more antihypertensive agents prior to the institution of minoxidil. Seventy-one per cent of the patients had diastolic blood pressure greater than 110 mm Hg.

Supine blood pressures ranged from 160-204 mm Hg systolic and 110-142 mm Hg diastolic. A large number of these patients had experienced dose-limiting side effects due to their combinations of anti-hypertensive medicines, namely: postural hypotension (23.5%), bradycardia (4.4%), somnolence (4.4%), and diarrhea (1.5%). A high incidence of target organ damage was demonstrated. All patients displayed varying grades of hypertensive retinopathy. Left ventricular hypertrophy was noted in 86 per cent of the patients, and approximately 50 per cent had experienced one or more episodes of heart failure. Cerebrovascular accidents occurred in 14 per cent of the patients, and hypertensive encephalopathic episodes developed in 13 per cent. Varying degrees of renal insufficiency were evident in 137 patients; 56 patients required dialysis support. Initiation of minoxidil therapy decreased the supine blood pressure in most patients to satisfactory levels. Blood pressures of 138-175 mm Hg systolic over 89-103 mm Hg diastolic were achieved.

Martin and colleagues described the use of minoxidil in 143 of 510 patients with refractory hypertension who were treated from three mos to three yrs.<sup>10</sup> Eighty-seven patients in one group were on maintenance hemodialysis when minoxidil was first administered; their blood pressures averaged 190/130 mm Hg prior to treatment. Followup blood pressures fell to an average of 150/100 mm Hg for the 46 patients who remained on minoxidil. A second group of patients was comprised of 56 patients with excellent renal function. Supine blood pressures averaged 208/128 mm Hg before treatment and at follow-up (median interval seven mos) averaged 160/97 mm Hg in the 35 individuals who remained on minoxidil therapy. A total of 62 individuals discontinued treatment with the drug. However, in 36 of these patients, renal transplants (9), management of hypertension with other medications subsequent to control with minoxidil (2), and problems unrelated to the drug (*i.e.* shunt failure, non-compliance, or loss from follow-up) (7), were the reasons for discontinuation of therapy. In the other 26 patients, termination of treatment was attributed to side effects (7), bilateral nephrectomy (5), diminished effectiveness (1), and death (13).

Jacob and Brunnberg also reported on the use of minoxidil in 100 patients with severe essential hypertension.<sup>11</sup> The initial pretreatment supine systolic and diastolic pressures averaged 212 (range 150-270) and 125 (range 90-150) mm Hg respectively. Mean arterial pressures had fallen to 161/94, 155/91, 150/90, and 141/91 mm Hg at followup

after one (94 patients), four (84 patients), eight (51 patients), and 12 (22 patients) months respectively.<sup>11</sup> The drug was well tolerated by most of these patients.

In another study, seventeen patients with hypertension refractory to maximally tolerated doses of conventional hypotensive agents were treated with minoxidil.<sup>12</sup> Pretreatment diastolic pressures were 120-190 mm Hg (mean 140 mm Hg). Following six months of treatment, the mean supine diastolic blood pressure averaged 80 mm Hg (range 70-110 mm Hg). This represented a statistically significant ( $P < 0.001$ ) reduction in pretreatment mean blood pressure values.

As previously indicated, 88 per cent of patients in the study by Keusch and associates had impaired renal function. No significant difference in the reduction of blood pressure levels were seen among these patients, irrespective of their degree of impending renal failure. Similar results were observed by Martin and colleagues when they observed patients with poor and excellent renal function treated with minoxidil.<sup>10</sup> When the average blood pressures were analyzed, the net differences between both pre- and post-treatment systolic and diastolic levels in both groups (azotemic vs nonazotemic) were similar. The dosages of minoxidil (range 5-40 mg/day) required to control blood pressure in these studies correlated closely with the amount of minoxidil utilized in earlier studies for the treatment of hypertension in the presence of advanced renal insufficiency.<sup>14, 15</sup>

Several investigators have noted that during minoxidil treatment, the total number and dosage of the other antihypertensive medicines used could be reduced.<sup>9, 10, 13</sup> Such reductions help minimize the side effects induced by these agents and may increase patient compliance.

### Adverse Effects

Minoxidil is not devoid of side effects. In one study, side effects occurred in 56 per cent of patients.<sup>9</sup> The following were observed: hypertrichosis (26%), edema (16%), congestive heart failure (7.7%), angina pectoris (5%), intermittent claudication (0.7%), and post-dialysis hypotension (0.7%). Development of these side effects, especially excessive hair growth in females, resulted in the discontinuance of the drug in 12.1 per cent of patients. The type and incidence of these side effects were comparable in other studies.<sup>10-13</sup> It has been reported that the hypertrichosis induced by

minoxidil can be treated with a calcium thioglycolate depilatory enabling women to use the drug chronically.<sup>32</sup> In addition to hypertrichosis, however, we have found that an increased coarsening of the facial skin can result from prolonged minoxidil therapy; this may limit the use of this drug in some women.

Minoxidil, like all potent vasodilators, induces reflex tachycardia and salt and water retention.<sup>14, 16, 18</sup> The concomitant administration of a  $\beta$ -blocker (such as propranolol or metoprolol) and a diuretic drug (such as furosemide, ethacrynic acid or a thiazide) has been found to obviate most of these effects.<sup>18</sup> This so-called "triple drug therapy" — first advocated by Gilmore, Weil, and Chidsey in 1970<sup>2</sup> — combined the usage of a vasodilator drug (hydralazine), a sympathetic suppressant (propranolol), plus a diuretic (thiazide) for the treatment of essential hypertension. In the study reported by Keusch and associates, 89.5 per cent of the patients taking minoxidil required the concomitant use of a  $\beta$ -blocker (propranolol 40-400 mg/day) to prevent significant tachycardic responses. Furthermore, 75 per cent of patients required a diuretic in conjunction with the minoxidil and propranolol therapy. Furosemide (in doses from 20-1,000 mg/day) or a thiazide were administered in 50.8 and 24.2 per cent of these patients respectively. The diuretic dosage for each agent varied, depending upon the degree of salt retention induced by the start of minoxidil.<sup>9</sup>

Seventeen patients with refractory hypertension also required "triple drug therapy" in the study reported by Dunea and his group.<sup>12</sup> All patients received daily doses of minoxidil (10-60 mg; mean, 30 mg), propranolol (40-160 mg; mean, 118 mg), and furosemide (40-480 mg; mean, 200 mg). Long term normalization of blood pressures was possible only when vasodilation was established with minoxidil, and secondary renal salt retention and reflex tachycardia were prevented with diuretic drugs and  $\beta$ -sympathetic blockade respectively.

Jacob and Brunnberg also treated patients with refractory hypertension simultaneously with minoxidil, propranolol, and diuretic drugs.<sup>11</sup> They further divided their patients into those who received propranolol prior to the initiation of minoxidil and those who received propranolol after the institution of minoxidil. A comparison of pulse rate rise was made between the two groups following the start of minoxidil. In the latter group the mean daily maintenance dosage of propranolol averaged 100 mg, while in the former the daily maintenance dosage of propranolol averaged 480 mg.<sup>11</sup> The control of tachycardia to



less than 90 beats/min was not significantly different between the two groups. Diuretic therapy was necessary in all but one patient. Thus, it appears that the start of  $\beta$ -sympathetic blocking drugs such as propranolol or metoprolol should be carried out prior to or simultaneously with the start of minoxidil therapy. Of course, a diuretic drug need not be administered in severely oliguric or dialyzed patients with end stage insufficiency.<sup>11</sup>

Unusual cardiotoxic effects of minoxidil have been observed in dogs following long-term experimental studies. Specifically, hemorrhagic lesions in the right atrium of beagles were described.<sup>1</sup> Because of these initial findings, the use of minoxidil has been under strict observation during investigational trials. However, Bryan and associates indicate that such lesions have not been observed in approximately 1,200 patients given minoxidil since 1969.<sup>16</sup>

Pulmonary hypertension reported during long-term treatment with minoxidil has been attributed to increased cardiac output or elevated pulmonary vascular resistance.<sup>17</sup> Recent studies do not support these observations.<sup>33, 34</sup> For example, Klotman and colleagues demonstrated in a prospective study that patients who had normal pulmonary pressure prior to minoxidil therapy experienced a decrease in both peripheral and pulmonary vascular resistance during administration of the drug.<sup>33</sup> Pulmonary hypertension was not evident during therapy.

Of interest is the fact that minoxidil has been used safely in patients with severe hypertension owing to renal involvement with systemic lupus erythematosus (SLE).<sup>35</sup> Moreover, the incidence of drug induced LE cell phenomenon has been reported to be extremely low.<sup>36</sup>

### Target Organ Effects

As indicated earlier, severe target organ damage is prevalent in most patients with uncontrolled hypertension. Improvement in the organ function is often observed as patients revert back to a more normotensive state following adequate therapeutic management. It is not unusual for a decline in glomerular filtration rate (*i.e.* creatinine clearance) to occur soon after the initiation of minoxidil therapy. However, this is most often a transient phenomenon. Return of glomerular filtration to baseline levels or improved levels is often noted if the blood pressure is normalized for six months or more.<sup>37-40</sup>

In one study, the optic fundi in 58 of 100 patients were graded initially following at least three months of minoxidil therapy (Keith-Wagener classifica-

tion\*). Fourteen were grade III and two grade IV prior to treatment, whereas nine remained grade III and one remained grade IV after minoxidil therapy.<sup>11</sup>

In another study the fundi in six patients were grade IV and in 13 grade III before minoxidil was instituted.<sup>10</sup> All reverted to grade II or to a healing grade III rating with successful minoxidil treatment. These authors also noted that repeated episodes of congestive heart failure had occurred in 14 patients prior to the start of minoxidil treatment. The episodes nearly ceased following treatment. There was also partial regression of the electrocardiographic pattern of left ventricular hypertrophy in three of 14 patients.<sup>10</sup>

With regard to renal dysfunction, Dunea and associates noted that all three patients requiring maintenance hemodialysis when minoxidil was instituted experienced increased urine output. Further, dialysis was discontinued in one patient and frequency of hemodialysis reduced in the other two patients.<sup>12</sup> The report by Wellburn, Blaufuss, and Bennett was not as impressive.<sup>17</sup> In their study, renal function improved in three patients, declined in three patients, and remained stable in seven patients following the start of minoxidil therapy.<sup>17</sup>

### Initiating Therapy

It is best to start therapy with a low dose of minoxidil — approximately 2.5-5.0 mg daily. Depending on individual tolerance and blood pressure response, the dosage can usually be doubled at three to four day intervals up to maximum dosage ( $40 \pm 10$  mg/day). It is prudent to realize that on a mg/mg basis in comparable dosing, minoxidil is approximately five to ten times more potent than hydralazine.<sup>4</sup> It is recommended that any individual receiving guanethidine as an antihypertensive drug have this drug sharply reduced in dosage (at least cut to one-third the usual dosage) — or preferably discontinued — for several days prior to the start of minoxidil therapy since prolonged hypotensive crises have been reported with this drug combination.<sup>38-40</sup> In addition, acute hypertensive crises have been reported in patients with an underlying (unsuspected) pheochromocytoma following the start of minoxidil

(Continued on page 78)

\* Keith-Wagener classification (*Medicine* 18:317-430, 1939): Grade I — arteriolar narrowing. Grade II — arteriolar narrowing plus A.V. crossing changes. Grade III — arteriolar narrowing plus A.V. crossing changes plus hemorrhages and exudates. Grade IV — grade III plus papilledema.



## Current COMMENT

H. B. LINDSLEY, M.D., *Editor*

### *Determinants of Survival in Coronary Artery Disease*

BERT Y. S. WONG, M.D. and ANN ALLEGRE, M.D., *Kansas City, Kansas*

TWENTY YEARS ago the mainstay of therapy for patients with coronary artery disease was nitroglycerin for relief of angina and bedrest for the management of acute myocardial infarction. Recent advances have provided further insight into the pathophysiologic mechanisms of angina, myocardial infarction, and their complications. Concomitantly these advances have provided a greater variety of methods with which to treat coronary artery disease. In addition to both short- and long-acting nitrites, a number of other drugs have been used to treat coronary artery disease including beta blockers, platelet inhibitors, cholesterol lowering agents and, more recently, the slow channel calcium blockers. Development of coronary artery bypass surgery has provided a major alternative therapy for coronary artery disease.

Because of these advances there has been more attention focused on the effect of medical and surgical therapy on the natural history of coronary artery disease. This article will review present knowledge of the natural history of coronary artery disease with particular emphasis on the cardiac determinants of survival (*Table I*). This will provide a basis for evaluation of therapy and its effect on natural history.

#### Prognosis

The annual mortality rate associated with the occurrence of angina pectoris as reported by a number of studies ranges from 2.5-9.0 per cent. In the

Framingham study, uncomplicated angina pectoris (occurring without association with myocardial infarction) was associated with an annual mortality rate of 4 per cent. This mortality rate occurred regardless of age in men, but for women under age 60 years the mortality rate was lower — approximately 2 per cent/year. For patients with an acute myocardial infarction the in-hospital mortality rate is in the range of 15-25 per cent with a subsequent mortality rate in the range of 10-20 per cent for the first year. Thereafter the mortality rate is approximately 5 per cent/year. The Framingham study showed that 19 per cent of men died within one year after their first myocardial infarction with a 25 per cent mortality rate during the next five years.

These studies were carried out a number of years ago. More recent studies show a decreased mortality rate associated with both angina pectoris and myocardial infarction. The National Institutes of Health have reported an annual mortality rate of 2 per cent for patients with mild angina pectoris. The recent study on the effects of aspirin and persantine on medically treated patients with myocardial infarction showed the annual mortality rate of the control group was 2-3 per cent during the 41-month follow-up period. This suggests that medical management

TABLE I  
CARDIAC PREDICTORS OF SURVIVAL IN  
CORONARY ARTERY DISEASE

Extent of coronary vessel involvement
Presence of left ventricular dysfunction
Hypertension
Complex ventricular arrhythmias

Address reprint requests to Dr. Wong, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.



of patients with coronary artery disease has improved survival.

### Coronary Vessel Involvement

It is now well established that a major determinant of survival is the extent of coronary vessel involvement with atherosclerosis. Approximately 5-10 per cent of patients with angina pectoris have no obstructive coronary lesions at coronary arteriography. The long-term followup of these patients indicates a low mortality rate, similar in fact to that of the general population. For patients who have single vessel disease ( $> 50\%$  stenosis of one coronary artery), the annual mortality rate is in the range of 2-3 per cent. Patients with single vessel disease involving the left anterior descending coronary artery have a slightly increased mortality rate compared to those with single vessel involvement of the right coronary or left circumflex coronary artery. Patients with two-vessel disease have an annual mortality rate of 5-6 per cent, and the patients with three-vessel disease have an annual mortality rate of 10-15 per cent. Patients with obstruction of the left main coronary artery have the worst prognosis with a mortality rate of 10-20 per cent/year.

Within this framework there have been attempts to identify high risk subsets on the basis of location and degree of stenosis of lesions. Studies have suggested that stenosis of the left anterior descending coronary artery proximal to the first septal perforator branch, high grade stenoses of the left anterior descending and circumflex coronary arteries ("left main equivalents"), and stenosis of the left anterior descending and right coronary arteries are subsets with particularly poor prognoses within each group; however, more data is required to define these subsets further.

### Left Ventricular Function

The degree of left ventricular dysfunction may be the most important independent determinant of survival. Studies have shown that patients with coronary artery disease and cardiomegaly or clinical signs of heart failure have a worse prognosis than those without heart failure. In the Framingham study, the development of clinical signs of heart failure was associated with a five-year survival rate of 50 per cent. In Russek's study, patients with severe angina pectoris without other risk factors had an annual mortality rate of 1.2 per cent and five-year mortality rate of 6 per cent; patients with angina and poor left ventricular function had an initial annual mortality rate of approximately 25 per cent with a five-year mortality rate of 67 per cent. In the one-

year period following myocardial infarction, the mortality rate for those patients without clinical evidence of heart failure is less than 5 per cent compared to a mortality rate of 10-30 per cent for those with clinical signs of heart failure. Examined from a different aspect, more recent studies utilizing radionuclide methods of determining ejection fraction have shown that, following myocardial infarction, patients with low ejection fractions have a significantly higher mortality rate than those with normal ejection fractions.

The influence of left ventricular dysfunction on prognosis is independent of coronary vessel involvement. Bruschke's study correlated prognosis with angiographic findings and showed that the five-year mortality rate associated with one-, two-, or three-vessel disease and normal left ventricular angiogram was 6, 32, and 35 per cent respectively. The five year mortality rate for patients with one-, two-, or three-vessel disease associated with an abnormal left ventriculogram (aneurysm or diffuse scar) ranged from 50-90 per cent respectively. Thus the presence of angiographically defined left ventricular dysfunction added significantly to the mortality rate regardless of the degree of coronary vessel involvement.

It is of interest that more recent data from the National Institutes of Health and Veterans Administration cooperative study of stable angina have confirmed the adverse effect of left ventricular dysfunction on survival and has also shown an improved overall survival rate compared to Bruschke's earlier data. For patients with two- or three-vessel disease, they report an annual mortality rate of 2-3 per cent for those with normal left ventricular function and 6 per cent for those with abnormal left ventricular function.

### Hypertension

The risk of cardiovascular events rises in proportion to the magnitude of blood pressure and evidence of target organ involvement. In the Framingham study, a single casual measurement of blood pressure was highly predictive of future cardiovascular events, although the average of several measurements improved predictability. After myocardial infarction the worst prognosis occurs in those with the largest decrease in blood pressure. These are patients who also have the greatest degree of left ventricular dysfunction. Patients who continue to be hypertensive have a mortality rate five times higher than normotensive patients.

Studies examining the relationship of blood pressure and mortality associated with coronary vessel involvement have shown hypertension increases the

mortality rate regardless of the number of coronary vessels involved. Thus, hypertension is a major risk factor in that it predisposes to development and also increases mortality due to coronary artery disease.

### Ventricular Arrhythmias

Ventricular arrhythmias are associated with increased risk of sudden death in patients with coronary artery disease, especially during the first year after a myocardial infarction. Complex forms of ventricular ectopy, including pairs or runs of premature beats (ventricular tachycardia) or early prematurities (the R-on-T phenomenon) are especially predictive of increased mortality. This has been well documented in 24-hour ambulatory monitoring studies prior to hospital discharge after an acute infarction. Patients resuscitated from ventricular fibrillation or tachycardia occurring without infarction are also at high risk of sudden death.

The extent to which ventricular arrhythmias are an independent determinant of survival in coronary heart disease is unclear. Studies correlating ventricular arrhythmias with arteriographic findings have shown an increased incidence of complex ventricular arrhythmias in patients with multivessel disease compared to those with single vessel disease. Some investigators have pointed out that these arrhythmias occur in those patients with the greatest degree of left ventricular dysfunction, and that the ejection fraction is as good or better predictor of sudden death than were the arrhythmias. In one study all episodes of sudden death occurred in the subset of patients who had both an abnormally low ejection fraction and complex ventricular arrhythmias.

Other electrocardiographic features associated with a worsened prognosis after infarction include persistent atrioventricular conduction abnormalities (second or third degree block) or intraventricular conduction defect, persistent downsloping ST segments or inverted T waves, atrial arrhythmias (especially atrial fibrillation), Q waves in multiple leads, and voltage criteria for left ventricular hypertrophy.

### Conclusion

Survival for patients with coronary heart disease is dependent upon a number of factors. We have reviewed the major cardiac determinants of survival. These are the extent of coronary vessel involvement, degree of left ventricular dysfunction, presence of hypertension, and presence of ventricular arrhyth-

mias. We have not discussed non-cardiac factors affecting survival which include age, sex, social class, cigarette smoking habits, obesity, and activity tolerance. The data presented show the importance of patient selection in defining the natural history of coronary artery disease and the limitations of non-randomized studies of the effect of medical or surgical intervention on the natural history of coronary artery disease. It is clear that the mortality rate of any group of patients with coronary artery disease can vary greatly depending on the presence or absence of these determinants of survival.

### Self Assessment Questions

1. What is the most important predictor of poor prognosis after myocardial infarction?
2. What pattern of coronary vessel involvement with atherosclerosis predicts the worst prognosis?
3. What is the recent annual mortality rate for patients with coronary artery disease without left ventricular dysfunction?
4. What forms of ventricular ectopy are predictive of increased mortality?
5. What pattern of blood pressure change after myocardial infarction is associated with the worst prognosis?

(Answers on page 78)

### Suggested Readings

1. Kannel, W. B. and Feinleib, M.: Natural history of angina pectoris in the Framingham Study — Prognosis and survival. *Am. J. Cardiol.* 29:154-163, 1972.
2. Reeves, T. J.; Oberman, A.; Jones, W. B. and Sheffield, L. T.: Natural history of angina pectoris. *Am. J. Cardiol.* 33:423-430, 1974.
3. Epstein, S. E. *et al.*: Strategy for evaluation and surgical treatment of the asymptomatic or mildly symptomatic patient with coronary artery disease. *Am. J. Cardiol.* 43:1015-1025, 1979.
4. Winkle, R. H.: Ambulatory electrocardiography and the diagnosis, evaluation, and treatment of chronic ventricular arrhythmias. *Prog. Cardiovasc. Dis.* 23:99-128, 1980.
5. Moss, A. J.: Factors influencing prognosis after myocardial infarction. *Curr. Probl. Cardiol.* 4:1-52, 1979.
6. Burggraf, G. W. and Parker, J. O.: Progress in coronary artery disease — Angiographic, hemodynamic and clinical factors. *Circulation* 51:146-156, 1975.
7. Platici, E. V. *et al.*: Clinical and arteriographic variables predictive of survival in coronary artery diseases. *Am. J. Cardiol.* 46:543-552, 1980.
8. Kannel, W. B.; Sorlie, P.; Castelli, W. P. and McGee, D.: Blood pressure and survival after myocardial infarction: The Framingham Study. *Am. J. Cardiol.* 45:326-330, 1980.



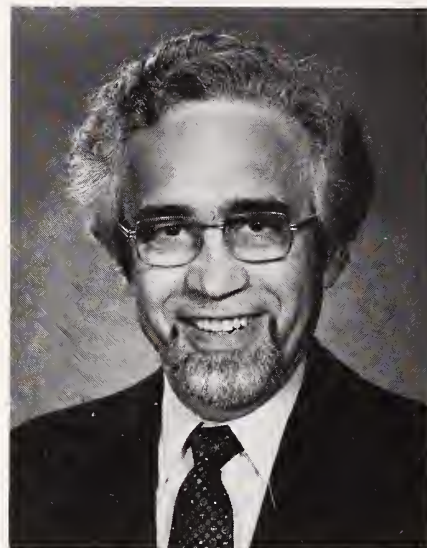
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## *The President's Message*

High quality patient care has been one of the goals of the Kansas Medical Society for the past 121 years. In an effort to assure reaching that goal, the Kansas Medical Society instituted required continuing medical education for its members several years ago. This was done, in part, in anticipation that the Board of Healing Arts would also be adopting required continuing medical education. We hoped to establish the pattern for their requirements, and we did. Required continuing medical education was accomplished only after extensive debate in reference committees and on the floor of the House of Delegates.

Since that time there has been a veritable flood of courses approved for CME credit. The quality and utility of these programs vary widely. Some require records of attendance documenting that the participants actually attended the full session, and others are very lax. Some are no-nonsense courses in respected teaching institutions; others seem to be designed more as an excuse to make a pleasure trip tax deductible. Credit can be earned for subjects completely unrelated to the participant's practice. Some courses require tests to receive credits while most do not.

The questions that we now face are: Does required CME improve patient care more than did voluntary CME? Are those who formerly pursued the various forms of continuing learning which they felt appropriate to their needs improving the care they provide their patients to a greater extent than they did before? Are those who were slow to change in the past and inattentive to the demands of expanding medical knowledge actually providing better care now as a result of required CME? For the Kansas Medical Society to accredit a hospital for CME, the



courses offered must reflect the perceived learning needs of the hospital staff. Do the physicians who need this specific new knowledge attend those hospital courses?

There are many questions yet to be answered before we know if requiring CME serves any useful purpose. We are hopeful the answers will be forthcoming.

A handwritten signature in dark ink, appearing to read "R. G. Gordin".

*President*



## *A Matter of Health*

The year 1981 is under way and even the purists who hold to the technicality that 1980 was the final year of the old decade must agree that the '80s are officially upon us. The event had already been anticipated by a variety of conferences trying to predict the changes in medical practice and delivery in the coming decade. Presumably, we should be able to settle down now and proceed with the implementation, alteration, or annihilation of these predictions.

For a starter, we came across the 1979 report of a conference sponsored by the St. Louis University Medical Center — one of those offerings that arrives in editorial offices and gets put aside for later consideration which never — well, seldom — comes. In the best conference protocol, this meeting utilized a panel of representatives from health care economics and administration, government, business, labor, consumer advocacy, and the medical profession. Not discounting the expertise of these individuals, it is characteristic of those who make up such panels that they generally come from the administrative levels of their activities rather than the more mundane practical levels. We don't fault this but offer the thought as orientation and a reminder that the individual medical practitioner, while acknowledging the importance of the strategic concepts of such efforts, will listen to the reports through the tactical filter of personal involvement, so any results will seem somewhat lacking in substance.

The problems confronted were those that have plagued us for some years — the high cost of medical care, the shortcomings of existing practice methods, the measures that must be taken to resolve these complex matters. The lack of demonstrable change in the year (plus) since the conference is not only due to complexity or even the fact that conference results are rarely of visible effect but more, perhaps, because the country's preoccupation with nominations, elections, and transitions fostered an effective if subtle tendency to defer active efforts pending the erection of new roadmarkers.

Conferences have inherent strengths and weaknesses. The former derive from the qualifications and experience of the participants in their specific areas as well as their generally high purpose. One of the more limiting defects in the conference technique, however, is the necessity to define terms of equivalent meaning and hold to such definitions so that the participants continue to talk about the same things. Since this is rarely done, the audience is more apt than not to come away with some doubt that anything has been accomplished. Again, the nature of the participants' tenets is usually predictable from previous pronouncements and postures (they wouldn't be there if these hadn't been on record) so that any effective production from any given conference is the net remainder after conflicting thoughts have neutralized each other.

For the most part, conferees are long on sincerity, an essential ingredient but an ambiguous virtue. (With no reflection on these panelists, we interject the thought that there has probably been no more sincere individual in this century than Adolf Hitler.) Objectivity is perhaps the most important feature but the greater the zeal of the advocate in a particular calling, the higher he goes in pursuing his objective, the more subjective the effort becomes. The effective strengths, then, are really the mirror images of the weaknesses. So the intellectual power and ideologic motivation that is congregated around the conference table tends, after the microphones are turned off and the papers are put back in the briefcases and the congratulatory handshakes are exchanged, to be dissipated like diminishing ripples spreading over the public pond.

The cast of this particular conference included the standard characters: the economist, the consumer's advocate, representatives of business and labor and government and medicine. Their lines reflected their interest in getting their respective bridles on the medical maverick and can be recapitulated from their summaries:



*The economist:* At this point, the provision of medical care to much of the elderly and indigent populations as well as the general benefits of improved medical technology are to the good (and we know from this he will not look with favor on anything diminishing them). The present medical environment, however, described as "permissive, insured, fee-for-service" with its increased number of doctors "has contributed a great deal to the increases in cost." The current incentives of the health care system and financing result in fostering more care rather than less. The tax laws promote the utilization of medical benefits as indirect compensation to the employee, not only insulating him from the economic facts of medical care but promoting the expectation of unlimited service.

*The government representative:* A representative of the then HEW department, he cited the interest of the government in improving the health of the country and acknowledged the need for the active participation of the private medical sector in the process. With the small portion of the medical dollar (reportedly 0.5%) going for education, he emphasized that the current situation represented an imbalance that retarded alterations of medical behavior (on the part of both physicians and patients) and called for a strong extension of lay medical education and health promotion, particularly by the private sector. With surprising candor, he noted "government is not the only, or even the best, or even an efficient means of developing this movement by itself." (But then he was really an outsider from a medical center on temporary duty at HEW — not a career bureaucrat.)

*The consumer's advocate:* The consumer has been at a disadvantage in the purchase of medical care, the decisions as to what or how much being made by the providers (physicians and hospitals) while third party reimbursements have limited effective comparisons of price. A continuing demand for "the most sophisticated technology" by consumers is acknowledged with a call for "best" to become synonymous with "appropriate." This process will require the consideration of the roles of education (including nutrition and prevention), financing, environment, occupation, and alternative methods of provision in the health arena. Aversion to national health insurance is professed but continuing failure of the medical community to meet the consumer's needs will assure that the government will do so — in its own way.

*The labor representative:* Labor's attitude is direct and unequivocal: we must have a "universal,

comprehensive national health insurance program with effective and equitable cost control at the earliest possible date. Labor and management and the whole country can no longer afford not to have it."

*The medical representative:* Of the numerous problems confronting us, three are paramount: (1) Utilization of computer programming will be developed to improve the quality of care by providing wide-spread consulting capability; (2) The problem of physician distribution is in the process of resolution and there remains only the question of whether it is fast enough to suit the public; (3) If hospital costs are not controlled, budget ceilings may be imposed and with them the enforced choices of "who gets what kind of care."

Considering the nature of the problems and the fact that there was no small divergence in the detailed expositions of them, it is not surprising that a year or so seems to show little progress toward resolving them, even taking into account any holding pattern imposed by the election year. A significant influence has been introduced, however, which does suggest something of the direction and form the struggle will take. An administration pledged to deregulation and decentralization has been voted into office. If, as is usually the case, some of the campaign rhetoric and promises have been muted, even repudiated, it seems certain there will be some distinct move away from the "let the government do it" idea which has become standard in recent years. And if there was a common point in the various proposals, it was the eventual dependence (whether actively sought or imposed) upon government clout to put them into effect. Any change, it appears, may be more of geography than ideology as the process will probably be one of passing the function back down to the more local levels of government. It has already been pointed out by both its friends and enemies that the new administration can probably do little toward achieving its goals (certainly in anything like intended form) since a change of administration is a change in the tip of the iceberg. A well-entrenched bureaucracy will assure the perpetuation of the "system" with minimal movement toward implementing this or any administration's innovations.

If the dismal estimates of federal efficiency, sensitivity, and response are true (and there is nothing more generally accepted by the populace), it may matter very little who is occupying the seats of alleged power, certainly if one is looking for prompt and tangible effect. On the other hand, inertia is not only the effect of keeping the mass sitting in one spot

(Continued on page 78)

## **RESOURCE FOR PHYSICIANS IN TROUBLE**

The Kansas Medical Society Impaired Physicians Program is now operational. If you desire more information concerning this program, if you know an impaired colleague who needs help, or if you are concerned about yourself or your spouse, please contact one of the Committee members nearest you, as listed below, or the KMS Executive Office. All such contacts will be held in strictest confidence and the caller need not reveal his name, if he/she so desires.

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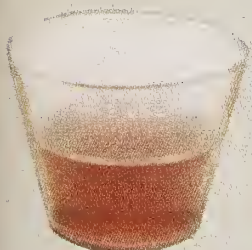
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- Designed for prophylactic and therapeutic use with diuretics and adrenocorticoids.
- Pleasant taste and convenient dosage aid patient compliance.

The organic salt of potassium can be given as a liquid without producing significant gastric symptoms and without an untoward effect on the mucosa of the small intestine.<sup>1</sup>

1. Beeson-McDermott, Textbook of Medicine, 15th Ed. 1979, W.B. Saunders Co., Philadelphia, page 1959.



## In Cases with Chloride Deficiency...

# TWIN-K-CI™

Each 15 ml supplies 15 mEq of potassium ions and 4 mEq of chloride ions as a combination of potassium gluconate, potassium citrate, and ammonium chloride in a sorbitol and saccharin solution.

The good tasting potassium supplement with chloride

- In hypokalemic hypochloremic alkalosis, chloride ions are required. Twin-K-CI is specially formulated to be a good tasting chloride containing potassium supplement.
- Contains no potassium chloride. Twin-K-CI is a carefully balanced combination of organic potassium salts plus ammonium chloride.
- In hypochloremic patients, potassium should be provided as the chloride salt, or chloride ion must be made available in some other form, such as ammonium chloride or sodium chloride.<sup>1</sup>

See prescribing information on last page of this advertisement.





## F-E-P CREME®

### DESCRIPTION

F-E-P Creme is a topical water soluble anti-inflammatory, anesthetic preparation intended for treatment of various inflammatory skin disorders. The drug contains the following active ingredients:

Iodochlorhydroxyquin	3.0%
Pramoxine Hydrochloride	0.5%
Hydrocortisone	1.0%

### INDICATIONS AND USAGE

Based on a review of this drug by the National Academy of Sciences-National Research Council and/or other information, FDA has classified the indications as follows: "Possibly" effective: Contact or atopic dermatitis; impetiginized eczema; nummular eczema; infantile eczema; endogenous chronic infectious dermatitis; stasis dermatitis; pyoderma, nuchal eczema and chronic eczematoid otitis externa, acne urticata; localized or disseminated neurodermatitis; lichen simplex chronicus; anogenital pruritus (vulvae, scroti, ani), folliculitis; bacterial dermatoses; mycotic dermatoses such as tinea (capitis, cruris corporis, pedis); moniliasis; intertrigo. Final classification of the less-than-effective indications requires further investigation.

Pramoxine Hydrochloride promptly relieves pain and itch. This compound may be used safely on the skin of those patients sensitive to the "caine" type local anesthetics.

### CONTRAINDICATIONS

Hypersensitivity to F-E-P Creme, or any of its ingredients or related compounds; lesions of the eye; tuberculosis of the skin; most viral skin lesions (including herpes simplex, vaccinia and varicella).

### WARNINGS

This product is not for ophthalmic use.

In the presence of systemic infections, appropriate antibiotics should be used.

### USE IN PREGNANCY

Topical steroids have not been reported to have an adverse effect on pregnancy. However, fetal abnormalities have been produced in pregnant laboratory animals that have been exposed to large doses of topical corticosteroids. Drugs of this class should not be used extensively during pregnancy.

### PRECAUTIONS

F-E-P Creme may be irritating to the skin in some patients. If irritation occurs discontinue therapy. Staining of clothes or hair may also occur with use of this preparation. Although systemic toxicity has not been reported with this drug, adrenal pituitary suppression is possible, especially when the drug is used extensively or kept under an occlusive dressing for a prolonged period.

Iodochlorhydroxyquin can be absorbed through the skin and interfere with thyroid function tests. Therapy with this preparation should stop at least a month before performance of these tests. The ferric chloride test for phenylketonuria (PKU) can be positive if F-E-P Creme is on the diaper or in the urine.

Prolonged use of this drug may result in an overgrowth of non-susceptible organisms requiring appropriate therapy.

### ADVERSE REACTIONS

Skin rash or hypersensitivity may occur following topical application.

The following local adverse reactions have been reported with topical corticosteroids, especially under occlusive dressings: burning, itching, irritation, dryness, folliculitis, hypertrichosis, acneiform eruptions, hypopigmentation, perioral dermatitis, allergic contact dermatitis, maceration of the skin, secondary infection, skin atrophy, striae, milia. Discontinue therapy if untoward reactions occur.

### DOSAGE AND ADMINISTRATION

Apply a thin layer of the drug to affected parts 3-4 times daily.

### Note:

1. F-E-P Creme is distributed with 3.0% iodochlorhydroxyquin for use when antibacterial/antifungal activity is desired.
2. F-E-P Creme (Plain) is the regular formulation, but without iodochlorhydroxyquin.

Both of these preparations contain pramoxine hydrochloride, which has topical anesthetic properties. Pramoxine is not chemically related to benzoic acid or amide type topical anesthetics. Patients can tolerate pramoxine although they may be sensitive to other "caine" type of topical or local anesthetics.

### HOW SUPPLIED

F-E-P Creme 1/2 ounce (15 gm) tubes NDC 0524-0026-51  
F-E-P Creme Plain 1/2 ounce (15 gm) tubes NDC 0524-0025-51  
Federal law prohibits dispensing without a prescription.  
July 1980

## SU-TON®

### DESCRIPTION

Forty-five milliliters of SU-TON contain the following ingredients:

Pentylenetetrazol	30 mg
Niacin	50 mg
Vitamin B-1	10 mg
Vitamin B-2	5 mg
Vitamin B-6	1 mg
Vitamin B-12	3 mcg
Choline	100 mg
Inositol	50 mg
Manganese (as Manganese Sulfate)	1 mg
Magnesium (as Magnesium Sulfate)	2 mg
Zinc (as Zinc Sulfate)	1 mg
Iron (as Ferric Pyrophosphate, Soluble)	22 mg
Alcohol	18%

### INDICATIONS AND USAGE

SU-TON contains pentylenetetrazol which may be helpful in the older patient as an anesthetic agent when mental confusion and memory defects are present. SU-TON also contains vitamins, trace minerals, and iron, for those patients who may benefit by preventing the development of a deficiency.

### CONTRAINDICATIONS

Epilepsy, convulsive disorders or known history of sensitivity to any of the listed active ingredients.

### WARNINGS

The safety of this preparation during pregnancy and lactation has not been established. Use of this drug requires that the physician evaluate the potential benefits of the drug against any possible hazard to the mother and child.

### PRECAUTIONS

Although there are no absolute contraindications to pentylenetetrazol, it should be used with caution in epileptic patients or those known to have a low convulsive threshold or a focal brain lesion. Caution should be exercised when treating patients with high doses of SU-TON who have heart disease. While pentylenetetrazol does not act directly on the myocardium, the results from central vagal stimulation could cause bradycardia.

### ADVERSE REACTIONS

Pentylenetetrazol in high doses may produce toxic symptoms typical of central nervous system stimulants, which act on the higher motor centers and the spinal cord. Convulsions resulting from this drug are spontaneous and are not induced by external stimuli. They usually last for several minutes and are followed by profound depression and respiratory paralysis. Death has been reported from the ingestion of 10 grams of pentylenetetrazol.

### DRUG ABUSE

Drug dependence has not been reported with SU-TON.

### OVERDOSAGE

Signs and symptoms of acute overdose may be due principally from overstimulation of the central nervous system and from excessive vasodilatation with resulting autonomic nervous system imbalance. The symptoms may include the following: vomiting, agitation, tremors, hyperreflexia, sweating, confusion, hallucinations, headache, hyperpyrexia, tachycardia. Treatment consists of appropriate supportive measures. If signs and symptoms are not too severe and the patient is conscious, gastric evacuation may be accomplished by induction of emesis or gastric lavage.

Intensive care must be provided to maintain adequate circulation and respiratory exchange.

### DOSAGE AND ADMINISTRATION

One tablespoonful (15 ml) 3 times a day 20-30 minutes before meals. This drug is not for use in children under 12 years of age.

### HOW SUPPLIED

Bottles of 473 ml (16 fl oz) NDC 0524-0015-16  
Federal law prohibits dispensing without prescription.  
February 1980

## TWIN-K®

### DESCRIPTION

Each 15 milliliter (one tablespoonful) supplies 20 mEq of potassium ions as a combination of potassium gluconate and potassium citrate in a sorbitol and saccharin solution.

### INDICATIONS AND USAGE

For use as oral potassium therapy in the prevention or treatment of hypokalemia which may occur secondary to diuretic or corticosteroid administration. It may be used in the treatment of cardiac arrhythmias due to digitalis intoxication.

### CONTRAINDICATIONS

Severe renal impairment with oliguria or azotemia, untreated Addison's disease, adynamia episodica hereditaria, acute dehydration, heat cramps and hyperkalemia from any cause. This product should not be used in patients receiving aldosterone antagonists or triamterene.

### WARNINGS

TWIN-K (potassium gluconate and potassium citrate) is a palatable form of oral potassium replacement. It appears that little if any potassium gluconate-citrate penetrates as far as the jejunum or ileum where enteric coated potassium chloride lesions have been noted. Excessive, undiluted doses of TWIN-K may cause a saline laxative effect.

To minimize gastrointestinal irritation, it is recommended that TWIN-K be taken with meals or diluted with water or fruit juice. A tablespoonful (15 ml) in 8 ounces of water is approximately isotonic. More than a single tablespoonful should not be taken without prior dilution.

### PRECAUTIONS

Potassium is a major intracellular cation which plays a significant role in body physiology. The serum level of potassium is normally 3.8-5.0 mEq/liter. While the serum or plasma level is a poor indicator of total body stores, a plasma or serum level below 3.5 mEq/liter is considered to be indicative of hypokalemia.

The most common cause of hypokalemia is excessive loss of potassium in the urine. However, hypokalemia can also occur with vomiting, gastric drainage and diarrhea.

Usually a potassium deficiency can be corrected by oral administration of potassium supplements. With normal kidney function, it is difficult to produce potassium intoxication by oral administration. However, potassium supplements must be administered with caution since, usually, the exact amount of the deficiency is not accurately known. Checks on the patient's clinical status and periodic EKG and/or serum potassium levels should be made. High serum potassium levels may cause death by cardiac depression, arrhythmias or arrest.

In patients with hypokalemia who also have alkalosis and a chloride deficiency (hypokalemic hypochloremic alkalosis), there will be a requirement for chloride ions. TWIN-K is not recommended for use in these patients.

### ADVERSE REACTIONS

Symptoms of potassium intoxication include paresthesias of the extremities, flaccid paralysis, listlessness, mental confusion, weakness and heaviness of the legs, fall in blood pressure, cardiac arrhythmias and heart block. Hyperkalemia may exhibit the following electrocardiographic abnormalities: disappearance of the P wave, widening and slurring of the QRS complex, changes of the ST segment and tall peaked T waves.

TWIN-K taken on an empty stomach in undiluted doses larger than 30 ml can produce gastric irritation with nausea, vomiting, diarrhea, and abdominal discomfort.

### OVERDOSAGE

The administration of oral potassium supplements to persons with normal kidney function rarely causes serious hyperkalemia. However, if the renal excretory function is impaired, potentially fatal hyperkalemia can result. It is important to note that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration with or without EKG changes. Treatment measures include:

1. Elimination of potassium containing drugs or foods.
2. Intravenous administration of 300 to 500 ml/hr of a 10% dextrose solution containing 10-20 units of crystalline insulin per 1000 milliliters.
3. Correction of acidosis.
4. Use of exchange resins or peritoneal dialysis.

In treating hyperkalemia, it should be noted that patients stabilized on digitalis can develop digitalis toxicity when the serum potassium concentration is changed too rapidly.

### DOSAGE AND ADMINISTRATION

The usual adult dosage is one tablespoonful (15 ml) in 6-8 fluid ounces of water or fruit juice, two to four times a day. This will supply 40 to 80 mEq of potassium ions. The usual preventative dose of potassium is 20 mEq per day while therapeutic doses range from 30 mEq to 100 mEq per day. Because of the potential for gastrointestinal irritation, undiluted large single doses (30 ml or more) of TWIN-K are to be avoided.

Deviations from this schedule may be indicated, since no average total daily dose can be defined, but must be governed by close observation for clinical effects.

### HOW SUPPLIED

Bottles of 1 pint (16 fl oz)

NDC 0524-0021-16

### CAUTION

Federal law prohibits dispensing without prescription.

July 1980

## TWIN-K-CI™

### DESCRIPTION

Each 15 ml (one tablespoonful) supplies 15 mEq of potassium ions and 4 mEq of chloride ions as a combination of potassium gluconate, potassium citrate, and ammonium chloride, in a sorbitol and saccharin solution.

### INDICATIONS

For use as oral potassium therapy in the prevention or treatment of hypokalemia which may occur secondary to diuretic or corticosteroid administration. It may be used in the treatment of cardiac arrhythmias due to digitalis intoxication.

Potassium and chloride are usually the salts of choice in the treatment of hypokalemia since chloride and potassium deficiencies are likely to be associated with each other.

### CONTRAINDICATIONS

Severe renal impairment with oliguria or azotemia, untreated Addison's disease, adynamia episodica hereditaria, acute dehydration, heat cramps and hyperkalemia from any cause. This product should not be used in patients receiving aldosterone antagonists or triamterene.

### WARNINGS

TWIN-K-CI is a palatable form of oral potassium replacement. Excessive, undiluted doses of TWIN-K-CI may cause a saline laxative effect.

To minimize gastrointestinal irritation, it is recommended that TWIN-K-CI be taken with meals or diluted with water or fruit juice. A tablespoonful (15 ml) in 8 ounces of water is approximately isotonic. More than a single tablespoonful should not be taken without prior dilution.

### PRECAUTIONS

Potassium is a major intracellular cation which plays a significant role in body physiology. The serum level of potassium is normally 3.8-5.0 mEq/liter. While the serum or plasma level is a poor indicator of total body stores, a plasma or serum level below 3.5 mEq/liter is considered to be indicative of hypokalemia.

The most common cause of hypokalemia is excessive loss of potassium in the urine. However, hypokalemia can also occur with vomiting, gastric drainage and diarrhea.

Usually a potassium deficiency can be corrected by oral administration of potassium supplements. With normal kidney function, it is difficult to produce potassium intoxication by oral administration. However, potassium supplements must be administered with caution since, usually, the exact amount of the deficiency is not accurately known. Checks on the patient's clinical status and periodic EKG and/or serum potassium levels should be made. High serum potassium levels may cause death by cardiac depression, arrhythmias or arrest.

In patients with hypokalemia who also have alkalosis and a chloride deficiency (hypokalemic hypochloremic alkalosis), there will be a requirement for chloride ions. TWIN-K-CI is recommended for use in these patients.

### ADVERSE REACTIONS

Symptoms of potassium intoxication include paresthesias of the extremities, flaccid paralysis, listlessness, mental confusion, weakness and heaviness of the legs, fall in blood pressure, cardiac arrhythmias and heart block. Hyperkalemia may exhibit the following electrocardiographic abnormalities: disappearance of the P wave, widening and slurring of the QRS complex, changes of the ST segment and tall peaked T waves.

TWIN-K-CI taken on an empty stomach in undiluted doses larger than 30 ml can produce gastric irritation with nausea, vomiting, diarrhea, and abdominal discomfort.

### OVERDOSAGE

The administration of oral potassium supplements to persons with normal kidney function rarely causes serious hyperkalemia. However, if the renal excretory function is impaired, potentially fatal hyperkalemia can result. It is important to note that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration with or without EKG changes.

Treatment measures include:

1. Elimination of potassium containing drugs or foods.
2. Intravenous administration of 300 to 500 ml/hr of a 10% dextrose solution containing 10-20 units of crystalline insulin per 1000 milliliters.
3. Correction of acidosis.
4. Use of exchange resins or peritoneal dialysis.

In treating hyperkalemia, it should be noted that patients stabilized on digitalis can develop digitalis toxicity when the serum potassium concentration is changed too rapidly.

### DOSAGE AND ADMINISTRATION

The usual adult dosage is one tablespoonful (15 ml) in 6-8 fluid ounces of water or fruit juice, two to four times a day. This will supply 30 to 60 mEq of potassium ions and 8 to 16 mEq of chloride ions. The usual preventative dose of potassium is 20 mEq per day while therapeutic doses range from 30 mEq to 100 mEq per day. Because of the potential for gastrointestinal irritation, undiluted large single doses (30 ml or more) of TWIN-K-CI are to be avoided.

Deviations from this schedule may be indicated, since no average total daily dose can be defined, but must be governed by close observation for clinical effects.

HOW SUPPLIED Bottles of 1 pint (16 fl oz)

NDC 0524-0022-16

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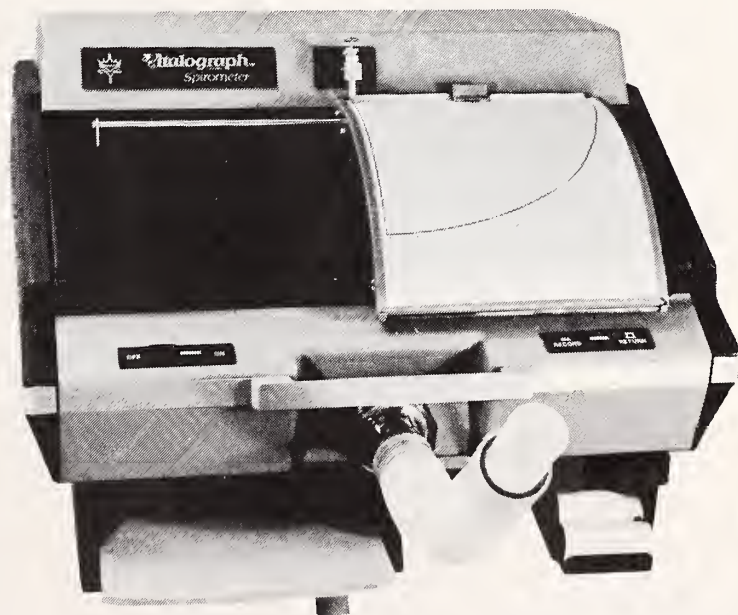


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## A Matter of Health

(Continued from page 74)

— it applies to the tendency for it to keep going once started, so there can be some hope that the new drivers can apply enough pressure to guide it one way or another.

The political analysts have not yet stopped puzzling over the election results since the winning combination relied in no small degree on votes not just for the one side but against the other. The winners have spoken glibly of a "mandate" but mandate carries a connotation of specificity, and there is a strong suspicion that voters were motivated by a sufficient variety of reasons to consider the results anything but a mandate with one exception — first priority should be given to correcting the economy. The development of all the other areas of national function are dependent on this and until a stable, directed course is established, there will be much conferring but very little development of lasting, effective programs.

So we suggest that the speed and direction of medical readjustments in these approaching years will stem not so much from the administration's efforts in their behalf but from responses in public attitude *if* the economic upheaval can be brought under control. Given the public demand *for* the medical accomplishments of the past few years, it is hard to divorce its complaints *against* the system from the social and economic considerations which have dominated all of us.

But let this be said to any who may be impressed with our prophetic pronouncements. We remarked to our beloved spouse some years ago that this business of women wearing pants would not last — oh, maybe a year or so but no more — especially on the older ones. Nostradamus, where are you? — D.E.G.

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## Managing Refractory Hypertension

(Continued from page 68)

therapy; it is recommended that minoxidil not be used in individuals with severe hypertension suspected as being due to pheochromocytoma,<sup>41</sup> Minoxidil has been used with success in the pediatric population with severe hypertension.<sup>42</sup>

### Summary

Minoxidil appears to be very effective in lowering blood pressure in patients with uncontrollable hyper-

tension, irrespective of pretreatment blood pressure levels. It is particularly valuable in patients refractory to maximally tolerated doses of conventional antihypertensive agents. Previously, such patients might have required bilateral nephrectomy. However, minoxidil may now provide an alternative when existing treatment methods fail.

Responses to the drug seem relatively consistent, even in the presence of impaired renal function. In fact, some patients have shown improvement in the status of their impending renal dysfunction following minoxidil therapy. Improvement of other target organ damage has also been reported.

Minoxidil may help reduce the frequency of side effects induced by other antihypertensive agents. However, the drug itself may produce side effects of its own which can possibly compromise compliance. As such, a  $\beta$ -blocker and a diuretic should be administered concomitantly with minoxidil when appropriate. Because of these substantial side effects, minoxidil should not be used as the initial form of drug therapy in hypertension. Nevertheless, if long-term safety can be ascertained, minoxidil should prove to be an extremely valuable drug in the treatment of refractory hypertension.

References may be obtained from the author.

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## Determinants of Survival in Coronary Artery Disease

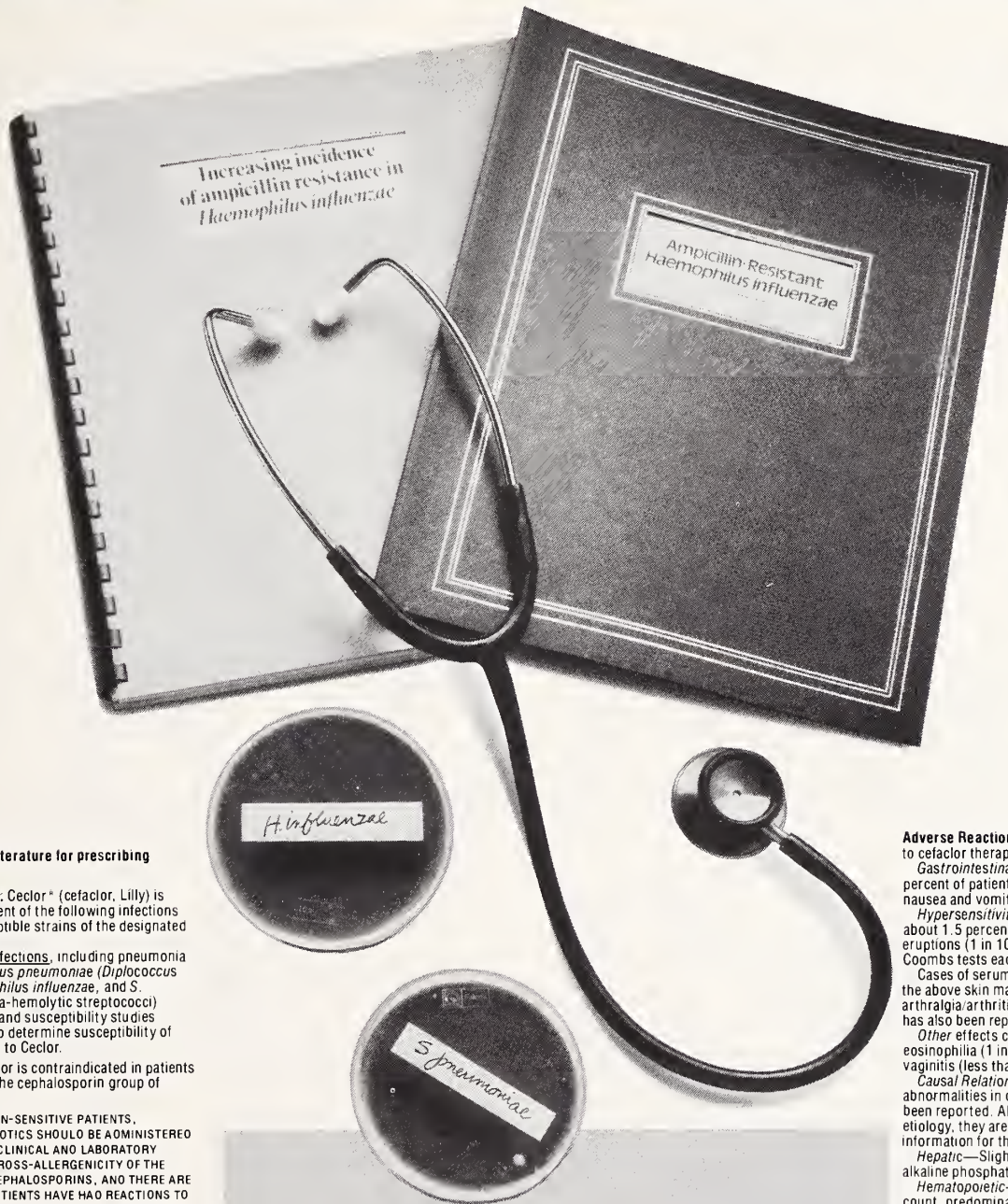
(Continued from page 71)

### Answers

1. The presence of left ventricular dysfunction predicts the highest mortality rates.
2. Stenosis of the left main coronary artery is associated with the worst prognosis.
3. Several studies show annual mortality rate lower than 5 per cent, often as low as 1 or 2 per cent.
4. Complex forms of ventricular ectopy, such as ventricular tachycardia or fibrillation, paired ectopic beats, or early prematurities predict increased mortality.
5. A large decrease in blood pressure at the time of myocardial infarction indicates a poor prognosis.



# An added complication... in the treatment of bacterial bronchitis\*



**Brief Summary**  
Consult the package literature for prescribing information.

**Indications and Usage:** Cefclor\* (cefclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cefclor.

**Contraindication:** Cefclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

**Warnings:** IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS TO BOTH DRUG CLASSES (INCLUDING ANAPHYLAXIS AFTER PARENTERAL USE).

Antibiotics, including Cefclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

**Precautions:** If an allergic reaction to cefclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of cefclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs test may be due to the drug.

Cefclor should be administered with caution in the presence of markedly impaired renal function. Under such a condition, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Cefclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinistix® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

**Usage in Pregnancy:** Although no teratogenic or antifertility effects were seen in reproduction studies in mice and rats receiving up to 12 times the maximum human dose or in ferrets given three times the maximum human dose, the safety of this drug for use in human pregnancy has not been established. The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus.

**Usage in Infancy:** Safety of this product for use in infants less than one month of age has not been established.

## Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis\*—are sensitive to treatment with Cefclor.<sup>1-6</sup>

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Cefclor.<sup>7</sup>

# Cefclor®

## cefclor

Pulvules®, 250 and 500 mg

**Adverse Reactions:** Adverse effects considered related to cefclor therapy are uncommon and are listed below: Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70) and nausea and vomiting (1 in 90).

**Hypersensitivity reactions** have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs tests each occur in less than 1 in 200 patients.

Cases of serum-sickness-like reactions, including the above skin manifestations, fever, and arthralgia/arthritis, have been reported. Anaphylaxis has also been reported.

**Other effects** considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

**Causal Relationship Uncertain—**Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

**Hepatic—**Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

**Hematopoietic—**Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

**Renal—**Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

\*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.<sup>8</sup>

**Note:** Cefclor\* (cefclor) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

### References

1. Antimicrob. Agents Chemother., 8:91, 1975.
2. Antimicrob. Agents Chemother., 11:470, 1977.
3. Antimicrob. Agents Chemother., 13:584, 1978.
4. Antimicrob. Agents Chemother., 12:490, 1977.
5. Current Chemotherapy (edited by W. Siegenthaler and R. Luthy), 11:880. Washington, D.C.: American Society for Microbiology, 1978.
6. Antimicrob. Agents Chemother., 13:861, 1978.
7. Data on file, Eli Lilly and Company.
8. Principles and Practice of Infectious Diseases (edited by G. L. Mandell, R. G. Douglas, Jr., and J. E. Bennett), p. 487. New York: John Wiley & Sons, 1979.



100961

Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285.

Eli Lilly Industries, Inc., Carolina, Puerto Rico 00630



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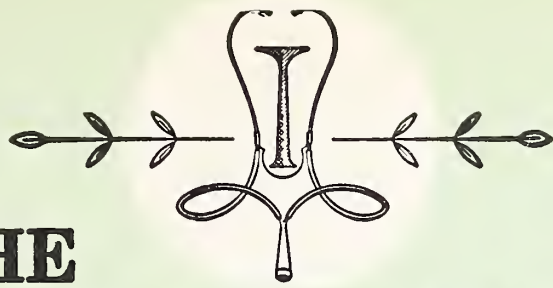
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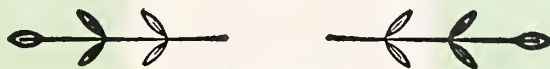


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# The JOURNAL of the KANSAS MEDICAL SOCIETY

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## A TRIBUTE TO LUCIEN R. PYLE, M.D.

The following tribute to Lucien R. Pyle, M.D., Topeka, was endorsed by the Council of the Kansas Medical Society meeting March 1, 1981, in Junction City:

WHEREAS, Lucien R. Pyle, on March 1, 1981, celebrated his 50th anniversary of medical practice in Kansas; and

WHEREAS, Dr. Pyle has given unstintingly of his time and energy to the Kansas Medical Society, serving, in addition to other functions, as Editor of *The Journal of the Kansas Medical Society* from 1946 to 1952, as President of the Society in 1953, and Delegate to the American Medical Association from 1957 to 1972; and

WHEREAS, Dr. Pyle's wisdom and integrity in these activities, in his practice, and in other medical and community services have imbued them with a firm guidance, a quality of purpose, and a lasting beneficial effect; and

WHEREAS, these characteristics, derived from the man, have become a part of the fabric of medical practice in Kansas and the tenets of this Society, and will stand as a continuing testimonial to his spirit and abilities; therefore be it

*Resolved*, That the Kansas Medical Society extends to Dr. Pyle its congratulations on an unexcelled record of service, expresses its appreciation for having the benefits of his example, and by this resolution, offers its thanks to him for his contributions to the profession and to the people of Kansas.



# Examine Me.

During the past several years, I have heard my name mentioned in movies, on television and radio talk shows, and even at Senate subcommittee sessions. And I have seen it repeatedly in newspapers, magazines, and yes, best-sellers. Lately, whenever I see or hear the phrases "overmedicated society," "overuse," "misuse," and "abuse," my name is one of the reference points. Sometimes even *the* reference point.

These current issues, involving patient compliance or dependency-proneness, should be given careful scrutiny, for they may impede my overall therapeutic usefulness. As you know, a problem almost always involves improper usage. When I am prescribed and taken correctly, I can produce the effective relief for which I am intended.

Amid all this controversy, I ask you to reflect on and re-examine my merits. Think back on the patients in your practice who have been helped through your clinical counseling and prudent prescriptions for me. Consider your patients with heart problems, G.I. problems, and interpersonal problems who, when their anxiety was severe, have been able to benefit from the medication choice you've made. Recall how often you've heard, as a result, "Doctor, I don't know what I would have done without your help."

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**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

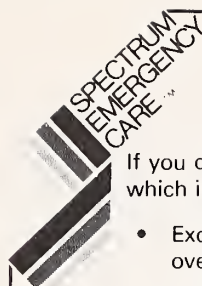
**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other anti-depressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported. Should these occur, discontinue drug. Isolated reports of neutropenia, jaundice, periodic blood counts and liver function tests advisable during long-term therapy.

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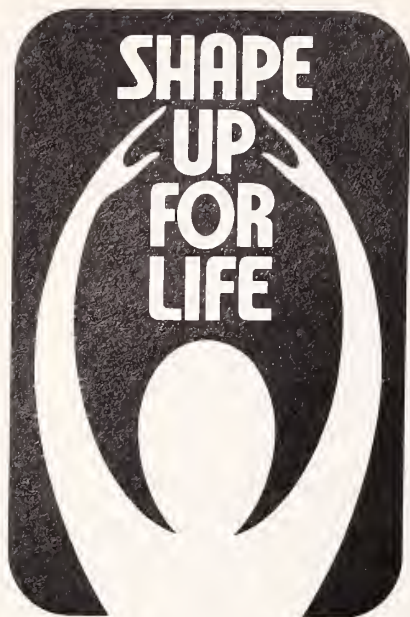


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# A U X I L I A R Y N E W S

## *An Open Letter to Kansas Physicians*

A blizzard blowing as I write makes it hard to realize that spring is near; but it is, and we are gearing up for the convention in May.

Convention is a time for business — reports and election of officers; and fun — tennis, golf, and an auction. The convention speaker will be Mrs. John Bates, Cuthbert, Georgia, First Vice President of the AMA Auxiliary and chairman of the national membership committee.

Betty Moore and Meldon Laury flew to Chicago to attend the AMA Auxiliary Regional Cluster meeting in preparation for their duties in the coming year. This is only one of many conferences AMA Auxiliary conducts during the year to prepare our officers for leadership.

Dues are coming in well, and we should have 1345 members by March 31. Sedgwick County has

shown a big increase in membership this year. Six resitern wives from Sedgwick have joined AMA Auxiliary.

Proceeds from the Christmas sharing cards are in, and the fund for AMAERF now totals \$1265 with more to come. Proceeds from the auction at convention will go to AMAERF and the Ronald McDonald homes.

The county presidents and state chairmen are working on year end reports. When these are consolidated, they present an impressive picture of the various activities of our auxiliaries.

We look forward to seeing all of you at the convention. We hope you plan to attend.

*Evelyn Huff,*

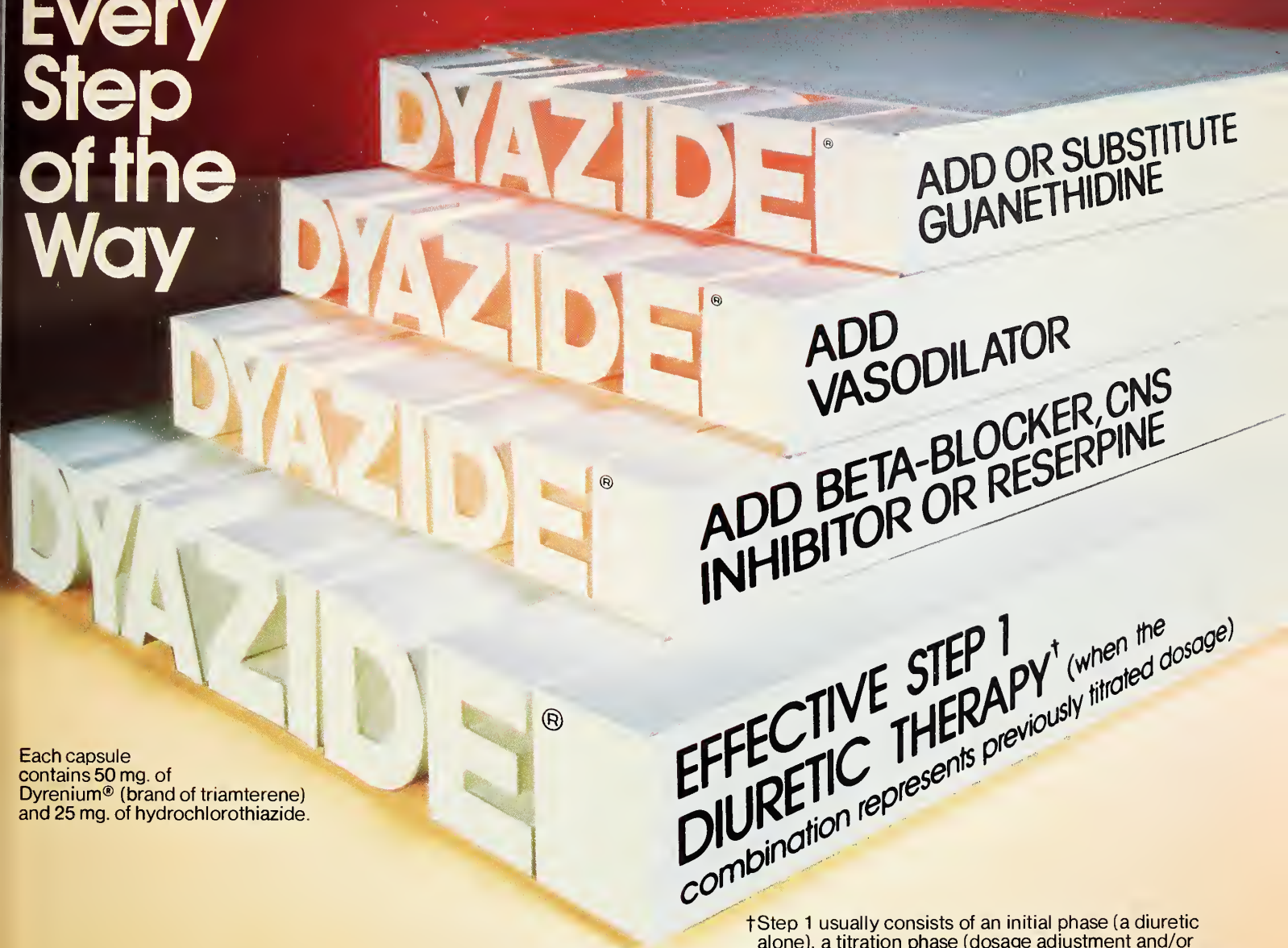
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**Contraindications:** Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

**Warnings:** Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K<sup>+</sup> levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K<sup>+</sup> intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, throm-

bocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

**Precautions:** Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Watch for signs of impending coma in severe liver disease. If spironolactone is used concomitantly, determine serum K<sup>+</sup> frequently; both can cause K<sup>+</sup> retention and elevated serum K<sup>+</sup>. Two deaths have been reported with such concomitant therapy (in one, recommended dosage was exceeded, in the other serum electrolytes were not properly monitored). Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with thiazides. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Anti-hypertensive effect may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with

possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia, although uncommon, has been reported. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

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Inventor

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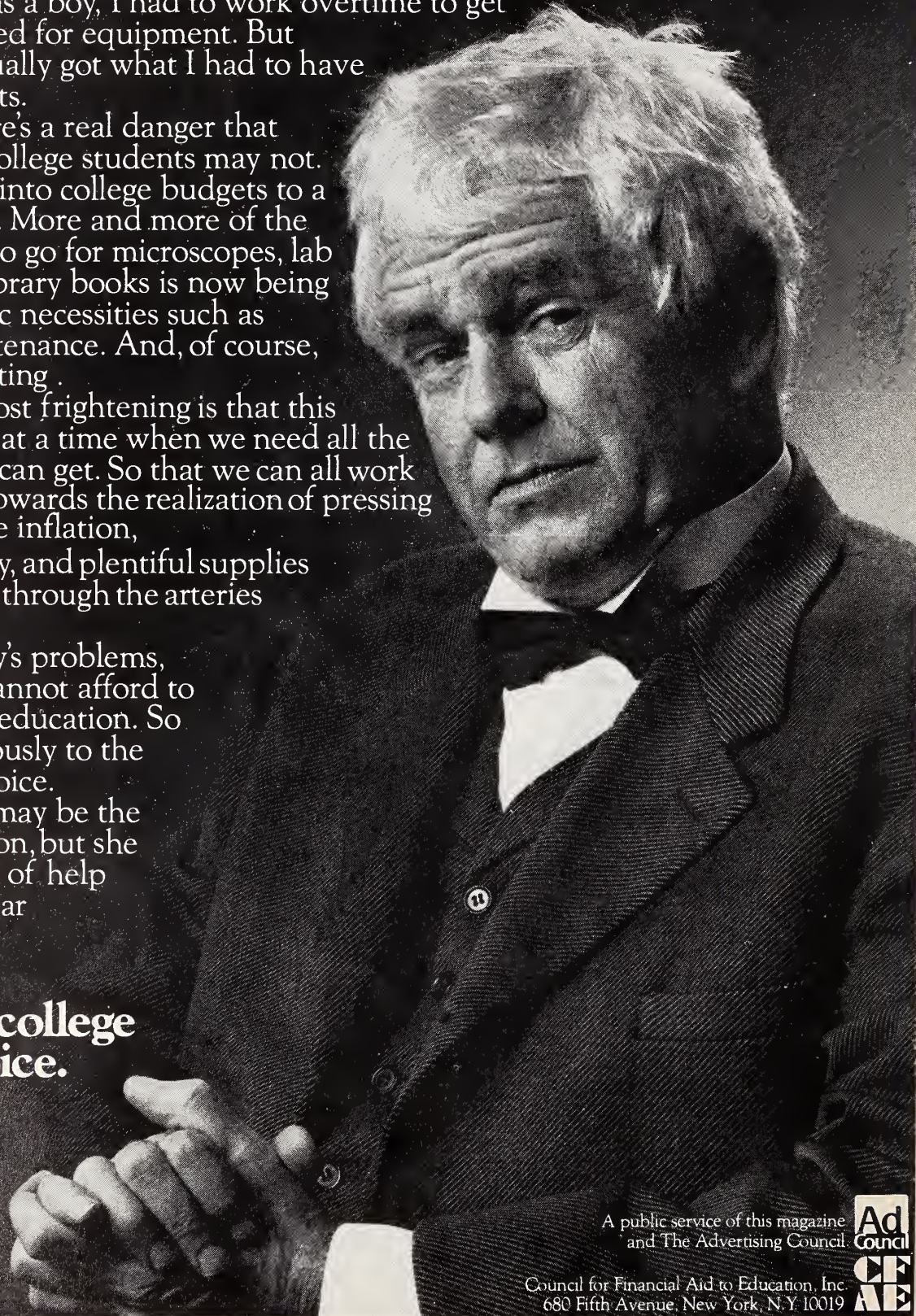
Today there's a real danger that many American college students may not. Inflation is eating into college budgets to a dangerous degree. More and more of the money that used to go for microscopes, lab equipment and library books is now being consumed by basic necessities such as heating and maintenance. And, of course, my specialty—lighting.

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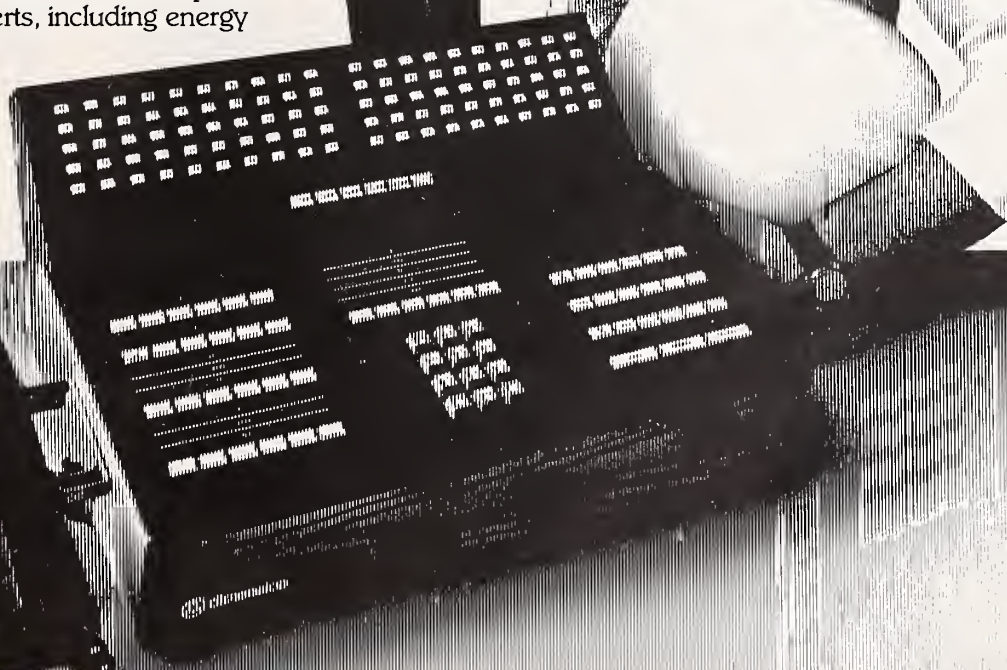
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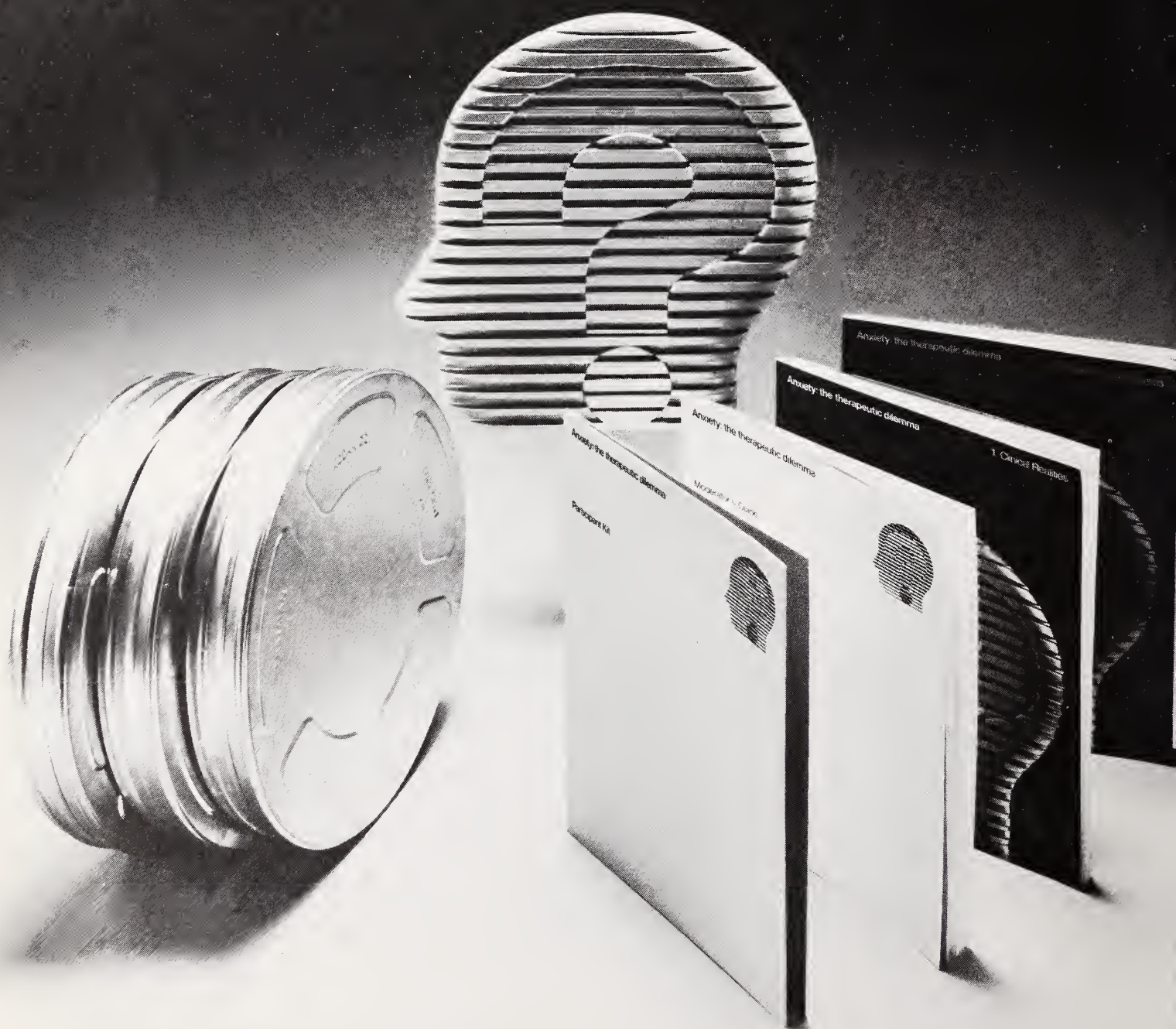
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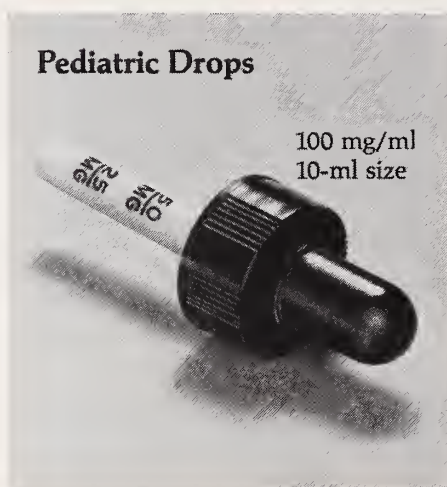
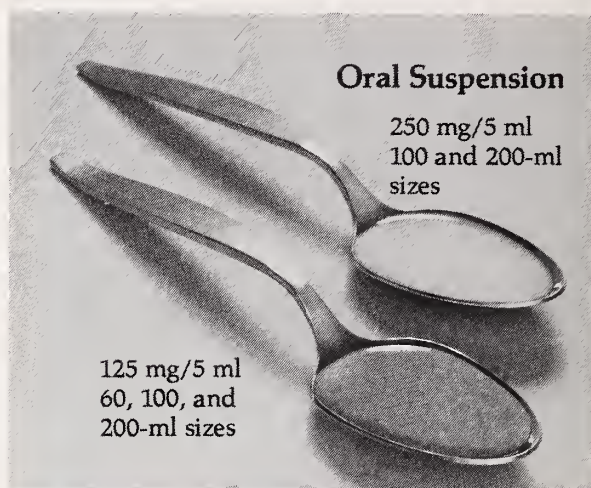
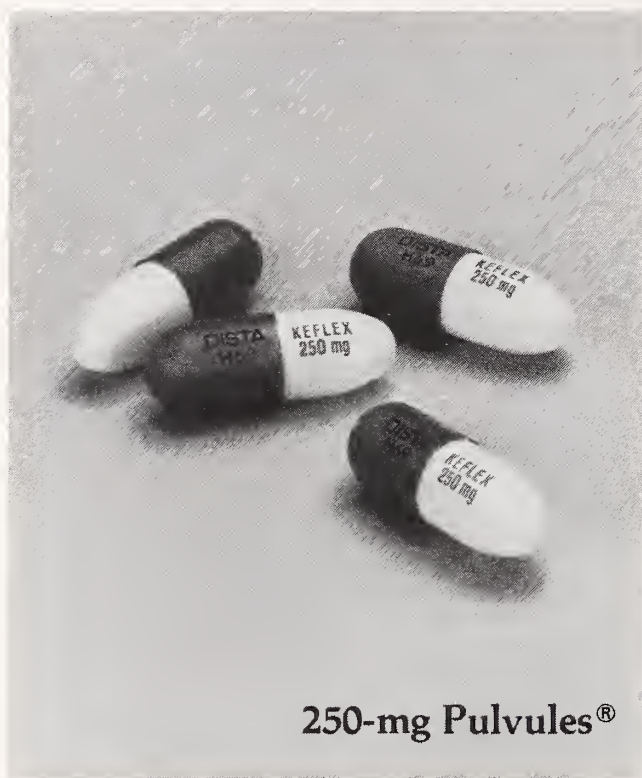
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See next page for brief summary of  
prescribing information.



# Hyperab® RABIES IMMUNE GLOBULIN (HUMAN)

## DESCRIPTION

Rabies Immune Globulin (Human)—Hyperab® is a sterile solution of antirabies gamma globulin (IgG) concentrated by cold alcohol fractionation from plasma of donors hyperimmunized with rabies vaccine. Hyperab® globulin is a 16.5% ± 1.5 solution of gamma globulin from venous blood in 0.3M glycine, preserved with 1:10,000 Thimerosal (a mercury derivative). Its pH is adjusted with sodium carbonate. The product is standardized against USA Standard Antirabies Serum. The USA unit of potency is equivalent to the International Unit (IU) for rabies antibody.

This product is prepared from human venous plasma. Each individual unit of plasma has been found nonreactive for hepatitis B surface antigen using the radioimmunoassay method of counter-electrophoresis.

## INDICATIONS

Treatment of rabies, once clinical disease becomes apparent, is rarely if ever successful. Rabies vaccine (duck-embryo origin, Lilly Laboratories) with or without Rabies Immune Globulin (Human)—Hyperab® should, therefore be given to all persons suspected of exposure to rabies, particularly to severe exposure. Whenever possible, Hyperab® globulin should be injected as promptly as possible after exposure. If initiation of treatment is delayed for any reason, however, Rabies Immune Globulin (Human) should be given just the same, regardless of the interval between exposure and treatment.

Rabies virus is usually transmitted by the bite of a rabid animal, but can occasionally penetrate abraded skin with the saliva of infected animals. Progress of the virus after exposure is believed to follow a neural pathway, and the time between exposure and clinical rabies is a function of the proximity of the bite (or abrasion) to the central nervous system and the dose of virus injected. The incubation is usually 2 to 6 weeks, but can be longer. After severe bites about the head and neck, it may be as short as 10 days.

After initiation of the vaccine series, it takes 2 weeks or longer for development of immunity to rabies. Since most vaccine failures have occurred in cases of severe exposure, the value of immediate immunization with preformed rabies antibody cannot be over-emphasized.

Recommendations for use of passive and/or active immunization after exposure to an animal suspected of having rabies were detailed by WHO, and by the US Public Health Service Advisory Committee on Immunization Practices (ACIP).

## INJECTION PROCEDURE

A portion of the Hyperab® globulin dose should be used to infiltrate the wound. The rest is injected intramuscularly.

## CONTRAINDICATIONS

Rabies Immune Globulin (Human)—Hyperab® is contraindicated in repeated doses, once vaccine treatment has been initiated. Repeating the dose may bring about interference with full expression of active immunity expected from the vaccine. Hyperab® globulin is also contraindicated in individuals who are known to have an allergic response to gamma globulin or thimerosal.

## PRECAUTIONS

NEVER ADMINISTER Hyperab® globulin INTRA-VENOUSLY.

## ADVERSE REACTIONS

Slight soreness at the site of injection, and slight temperature elevation, may be noted at times. Sensitization to repeated injections of human globulin is extremely rare.

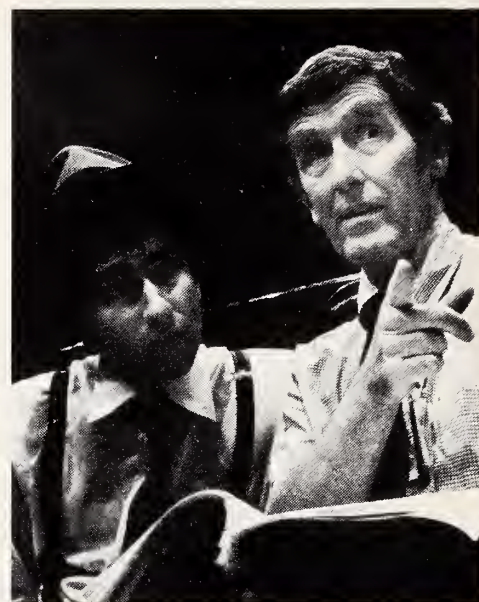
In the course of routine injections of a large number of persons with human gamma globulin, there have been a few isolated occurrences of angioneurotic edema, nephrotic syndrome, and anaphylactic shock after injection. Because of their rarity, it is difficult to determine whether such reactions are incidental, or causally related to the gamma globulin.

No instances of transmission of hepatitis B (homologous serum jaundice) have been reported from the use of human gamma globulin prepared by the fractionation methods employed by Cutter Laboratories, Inc.

## HOW SUPPLIED

Rabies Immune Globulin (Human)—Hyperab® is packaged in 2-ml. and 10-ml. vials with a potency of 150 International Units per ml. (IU/ml.). The 2-ml. vial contains a total of 300 IU which is sufficient for a child weighing 15 kg (33 lb.). The 10-ml. vial contains a total of 1500 IU which is sufficient for an adult weighing 75 kg. (165 lb.).

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**ROBERT C. LAWSON SR., M.D.**

Dr. Robert C. Lawson Sr., 55, Topeka, died February 12, 1980.

Dr. Lawson was born in Williamson, West Virginia. He was graduated from Yale University School of Medicine in 1948, and subsequently served a radiology residency there. He had practiced in Topeka since 1959, and was chairman of the department of radiology at Stormont-Vail Regional Medical Center.

Survivors include his wife, Ruth, one daughter, and four sons. Memorial contributions may be made to Stormont-Vail Health Sciences Library.

**Letters to VOX DOX should be addressed to the Vox Dox Editor, Journal of the Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612.**



# AMPUTEE CLINIC

A clinic especially designed to meet the demands of the amputee is now available in Wichita. The clinic is unique in that it emphasizes a multidisciplinary approach to the variety of problems faced by the amputee (either upper or lower extremity). It is the first comprehensive service of this nature in the southern half of the state to fulfill the needs of these patients.

The clinic has multiple objectives:

1. Evaluating the problem.
2. Fulfilling the need of patients for adequate care of their often difficult problem of the proper fitting of the prosthesis.
3. Teaching the amputee the proper use of the prosthesis through adequate training.
4. Examining ancillary problems, such as:
  - a. proper weight control
  - b. job placement
  - c. social adjustment

The medical director of the clinic is an orthopedist. Other staff members include:

- A certified prosthetist, who is an amputee and an expert in the fitting and fabrication of artificial limbs.
- A physical therapist, who works primarily with the lower limb amputees. Assistance is given in the evaluation of prostheses. More importantly, the therapist teaches proper muscle exercises in

order to establish proper limb control and works with the patient to establish the proper gait.

- An occupational therapist, who is primarily interested in upper limb amputees and teaches the proper use of prostheses for these patients.
- A dietician. Many of these patients have problems with obesity and must observe a careful diet. Others are diabetics and must follow a strict diabetic diet.
- A social worker, who assists with the financial problems, work and social adjustment, and vocational rehabilitation.
- A nurse coordinator to schedule appointments and synchronize the working of the clinic.

The clinic treats both new and old amputees. The amputee requiring revisional surgery is either treated at the hospital or referred back to the family physician for final disposition after consultation with the referring doctor. The clinic load is about ten amputees per session. Patients have been referred from physicians over almost the entire state of Kansas. Other sources of patient referral are Vocational Rehabilitation, Kansas Crippled Children's Program, and insurance companies.

Referring physicians or third parties receive a written evaluation and recommendation shortly after the patient is seen.

Additional information is available by calling Betty Bullock, R.N., 316-268-5040.

## DISCHARGE PLANNING WORKSHOP

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For information, contact Jim Loveless, The Kansas Foundation for Medical Care, Inc., 1000 W. 10th St., Topeka, KS 66604, 913/233-2217.

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# The Dean's Letter — 1981

## *The University of Kansas School of Medicine*

DAVID WAXMAN, M.D.,\* *Kansas City, Kansas*

THE OBJECTIVES of the University of Kansas College of Health Sciences are:

- to create and nurture an environment within which health science students may acquire the knowledge and skills required of modern day health professionals;
- to encourage and support basic and clinical research in the biomedical sciences;
- to provide graduate level academic and research programs for health care students and for future scientist/educators;
- to provide the highest quality and greatest diversity of health care services possible for the citizens of Kansas and the region; and
- to extend the educational resources and technical expertise of the College of Health Sciences to communities across the state of Kansas.

All of our efforts during the past year have been guided by and directed toward these objectives. I appreciate this opportunity to review some of our activities with you.

Student enrollment has risen to almost 2300. This includes nearly 800 medical, 320 nursing, 170 allied health and 470 graduate students, and approximately 600 residents-in-training at the Kansas City and Wichita campuses. Under the leadership of Dean William Reals, M.D., UKSM-Wichita has embarked on a major renovation of its new permanent location and has continued to consolidate its clinical education for 50 Junior and 50 Senior medical students. New and expanded residency programs have been conducted on the Wichita campus during the past year.

Marvin Dunn, M.D., has been appointed Dean of UKSM-KC succeeding James Lowman, M.D., who guided the school of Medicine through some major changes during the past few years. Stata Norton, Ph.D., appointed Dean of the School of Allied Health, has been a Professor of Pharmacology and now assumes the task of strengthening educational programs in the allied health professions.

Patient care is both an end in itself and a means whereby our students learn essential skills of the health professional. Our resources for patient care and education have been tremendously improved by implementation of Bell Memorial Hospital. It is now nearly completely occupied. Increased capabilities in the areas of trauma service, plastic surgery, urology, and orthopedics provide for a more comprehensive range of patient care.

Theodore Lawwill, M.D., has been appointed chairman of the Department of Ophthalmology, succeeding Albert N. Lemoine, M.D. Support from the Kansas Lions Clubs, a collaboration developed by Dr. Lemoine, will play a major role in expanding facilities and programs of the Department.

Gunnar Proud, M.D., has been succeeded as Chairman of the Department of Otorhinolaryngology by long time faculty member Charles Norris, M.D. Donald Barnhorst, M.D., Chairman of the newly formed Department of Thoracic and Cardiovascular Surgery, has added a tremendous capability to our program and is expanding the department. The Radiation Therapy Center has shown steady growth; the 40 and 20 million electron volt linear accelerators have added a unique new dimension to our treatment capabilities.

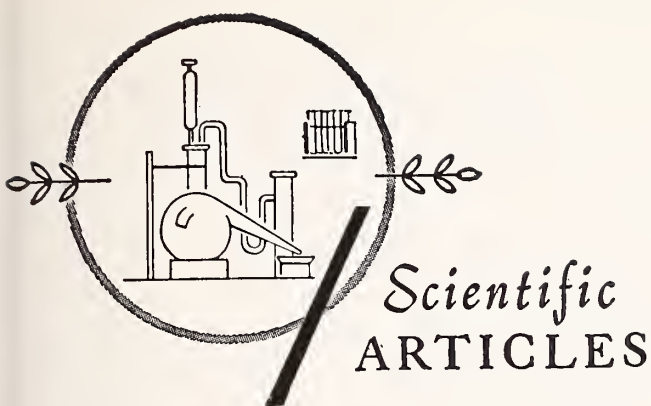
Research is a major component of our overall responsibilities. We are in the process of strengthening research activities in the belief that good research leads to good education, and that both lead to improved health care.

Construction of a new health sciences library is scheduled to begin in 1981. Funds for this major project will be derived from several sources, including contributions by faculty and alumni to the KU Endowment Association for the UKSM Library Fund.

Health Care Outreach and Continuing Education is still expanding. Area Health Education Centers in Chanute, Hays, and Garden City complement the outreach offices in Kansas City and Wichita with student, resident, and continuing education programs as well as community services such as health professions placement and *locum tenens*.

*(Continued on page 136)*

\* Executive Vice Chancellor, University of Kansas College of Health Sciences and Bell Memorial Hospital, Kansas City, Kansas.



# Reoperative Cardiac Surgery

## *Assessing the Risks of Secondary Procedures*

LAWRENCE J. DUKE, M.D. and DONALD A. BARNHORST, M.D., *Kansas City, Kansas*

THE MODERN ERA of cardiac surgery is approaching the end of its third decade, and reoperation for varying aspects of cardiac disease has assumed greater importance in the overall care of patients. The frequency of reoperations will almost certainly increase in the future, since patients are surviving longer following all types of cardiac surgery and thus have a significant likelihood of outliving the functional life of implanted prostheses or grafts. Better definition of the risk of reoperative cardiac surgery may allow more intelligent decisions regarding the initial operation — the choice of prosthetic device to be implanted, the completeness of revascularization, and the choice of palliative vs definitive repair of the underlying abnormality.

### Methods

A retrospective study was conducted of 91 adult patients undergoing a total of 93 reoperative cardiac surgical procedures between January 1976 and July 1980. All adult patients who underwent reoperative procedures for isolated valvular heart disease, combined valvular and coronary artery disease, and isolated coronary artery disease were included. Patients undergoing valve replacement following a prior valve-preserving procedure were also included. The types of operations performed are listed in *Table I*.

From the Department of Thoracic and Cardiovascular Surgery, The University of Kansas School of Medicine, Kansas City, Kansas.

Address reprint requests to Dr. Barnhorst, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.

The one miscellaneous operation was performed for massive hemorrhage from the aorta which occurred during a sternal wound debridement.

In general, the techniques for reoperative cardiac surgery varied little from those used for primary

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**The risks of reoperative cardiac surgery have been defined by a retrospective study and a review of recent literature. Indications are that increased technical difficulties may be involved, and that the risks are greater in some situations than in others, but are not excessive. Analysis of these data may facilitate more intelligent decisions regarding initial operation.**

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operations. The sternum was opened from xyphoid to manubrium with a reciprocating Stryker saw in a segmental fashion following sharp dissection of the cardiac structures from the undersurface of the sternum. If major hemorrhage occurred, the sternal edges were allowed to fall together, external compression was applied, and cardiopulmonary bypass was initiated through the femoral vessels. In the absence of significant hemorrhage, the heart was freed of adhesions sufficiently to allow cannulation of the ascending aorta and right atrium. Remaining cardiac adhesions were sharply dissected free after cardiopulmonary bypass was initiated and the heart decompressed. All operations were performed with continuous ischemic arrest and myocardial protection utilizing cold potassium cardioplegia.



TABLE I  
REOPERATIVE CARDIAC SURGERY

	<i>Number of Operations</i>	<i>Number of Deaths</i>
Aortic valve replacement	29	0
Mitral valve replacement	16	2
Multiple valve replacement/repair	20	3
Tricuspid valve replacement/repair	3	0
Coronary artery bypass	24	1
Miscellaneous	<u>1</u>	<u>0</u>
	93	6 (6.5%)

Operative mortality was defined as a death occurring within 30 days following surgery or during the same period of hospitalization following the operative procedure if that exceeded 30 days.

## Results

Table I depicts the operative mortality for the group of reoperative cardiac procedures. There were no deaths among those patients undergoing aortic valve replacement with or without associated coronary artery bypass grafting. Five of the six deaths occurred in patients undergoing either multiple valve replacement and/or repair or mitral valve replacement. The two deaths in the mitral valve group occurred in patients undergoing coronary artery bypass grafting in addition to valve replacement. These deaths represent an overall mortality rate of 6.5 per cent for the entire group. Causes of death included two patients who died in the operating room following failure to develop satisfactory cardiac function at the conclusion of the operation. In one of these patients dense calcification of the aortic root and ascending aorta prevented satisfactory coronary perfusion with cardioplegic solution and thus inadequate myocardial protection. One patient died on the sixth postoperative day of intractable cardiac arrhythmias. Two patients died two to eight weeks postoperatively of diffuse sepsis in combination with renal failure. The sixth death was due to progression of a preoperative stroke in a patient undergoing reoperative triple valve replacement.

No patient suffered untoward consequences from hemorrhage during the operative procedure. In two patients who died, technical problems related to the fact of reoperation significantly influenced the subsequent unfortunate course. In the first case, a pre-existing coronary artery graft was divided during the sternotomy. This graft was reanastomosed without difficulty. However, the patient died on the sixth postoperative day from intractable cardiac arrhyth-

TABLE II  
REOPERATIVE CARDIAC SURGERY  
AORTIC VALVE REPLACEMENT

<i>Authors</i>	<i>Number of Operations</i>	<i>Mortality Rate (%)</i>
Parr <i>et al.</i> , 1977 (University of Alabama)	102	9.5
Sandza <i>et al.</i> , 1977 (Washington University)	20	30.0
Syracuse <i>et al.</i> , 1978 (Columbia University)	50	8.0
Shemin <i>et al.</i> , 1979 (National Heart Institute)	42	10.3
Rossiter <i>et al.</i> , 1979 (Stanford University)	109	14.0
Barnhorst and Duke, 1980 (Kansas University)	29	0.0

mias and cardiac decompensation. It is possible that the period of ischemia between inadvertent division of the graft and reanastomosis was a factor in the fatal dysrhythmias. The second patient had a very large mitral prosthesis placed at the initial operation. This prosthesis had eroded into the posterior annulus and myocardium, baring the dominant circumflex coronary artery. During removal of this prosthesis the circumflex artery was injured. Coronary artery bypass grafting restored arterial continuity; however, this patient experienced low cardiac output postoperatively requiring balloon counterpulsation. Injury to the circumflex artery was likely a contributing factor in this patient's death.

## Discussion

We would like to focus on two aspects of this information: (1) the risk of repeat valve replacement or repair; and (2) the technical problems in reoperation. Table II summarizes the data from several recently published reports dealing wholly or in part with repeat aortic valve replacement or repair.<sup>1-5</sup> Although the operative mortality rate varied substantially, a review of these reports demonstrates that mortality following replacement of the prosthetic aortic valve is dependent primarily on the indications for operation, and secondarily, on the urgency of operation. Syracuse and colleagues<sup>5</sup> reported an operative mortality rate of 42 per cent when the prosthetic valve was involved either in an infectious process or a severe, stenotic process. This contrasted with an operative mortality rate of approximately 2 per cent when neither of these indications was present. The 14 per cent mortality rate reported by

TABLE III  
REOPERATIVE CARDIAC SURGERY

Authors	Mitral Valve Replacement MORTALITY		Multiple Valve Replacement Repair MORTALITY	
	No.	RATE (%)	No.	RATE (%)
Sandza <i>et al.</i> , 1977 (Washington University)	39	29.0	16	37.5
Syracuse <i>et al.</i> , 1978 (Columbia University)	25	32.0	8	25.0
Rossiter <i>et al.</i> , 1979 (Stanford University)	123	10.0		
Barnhorst and Duke, 1980	16	12.5	20	15.0

Rossiter and colleagues<sup>4</sup> from Stanford University was due almost entirely to patients undergoing relatively urgent operations in the face of prosthetic endocarditis. Parr and colleagues<sup>1</sup> reported an operative mortality rate of 3.7 per cent in patients undergoing elective aortic valve replacement as opposed to 42 per cent mortality in those patients undergoing urgent and emergent valve replacement. The low operative mortality rate in our present series reflects this factor. None of the patients undergoing repeat aortic valve replacement in our series required operation because of acute valvular endocarditis, and only one patient was operated upon on an emergent basis for an acutely thrombosed aortic valve. In considering those patients undergoing reoperative aortic valve replacement, two groups of patients can be defined. Those patients undergoing elective valve replacement without evidence of prosthetic endocarditis and with no acute prosthetic dysfunction represent a low-risk group with an operative mortality rate probably less than 5 per cent. Those patients undergoing an emergent valve replacement — especially those patients with prosthetic endocarditis or acute prosthetic valvular dysfunction — represent a very high risk group with an operative mortality rate in excess of 30 per cent.

Table III summarizes data from several recently published reports dealing with mitral valve replacement and multiple valve replacement or repair. In most reported series, the operative mortality rate for reoperative mitral valve replacement is significantly higher than that for aortic valve replacement. Sandza and colleagues<sup>2</sup> from Washington University reported a 29 per cent operative mortality rate, and the group from the National Heart Institute<sup>3</sup> reported a 32 per cent operative mortality rate in patients undergoing reoperative mitral valve replacement. In our

own series, two of 16 patients died after undergoing mitral valve replacement, a mortality rate of 12.5 per cent. However, both of the patients who died underwent concomitant coronary artery bypass grafting. No patient died following reoperative mitral valve replacement alone. The group from Stanford University<sup>4</sup> is the one exception in which the operative mortality rate for reoperative mitral valve replacement is somewhat lower than that for reoperative aortic valve replacement. However, this series is somewhat skewed by the very high incidence of prosthetic aortic valvular endocarditis.

In most patients undergoing reoperative multiple valve replacement or repair, the reported operative mortality rate varies from 25-37 per cent (Table III). In our own series, three of 20 patients died postoperatively, an operative mortality rate of 15 per cent.

It appears that secondary mitral valve replacement carries with it a higher mortality risk which is further increased by the necessity for concomitant procedures, such as coronary artery bypass grafting or multiple valve replacement or repair. This increased operative mortality risk probably is due to several factors: the effect of long-standing rheumatic valvular heart disease on overall ventricular function; the subtle progression of prosthetic dysfunction in the mitral position; and the frequency of tricuspid valve dysfunction in patients with long-standing mitral valve disease.

There are several technical problems involved in reoperative cardiac surgery. The heart and major arterial and venous structures of the thorax lie in close proximity to the sternum, and the risk of massive hemorrhage from injury to any of these structures is increased in the face of reoperation through a fibrous scar. Guidelines for safely opening a previous sternotomy incision have been well defined by others,<sup>6, 7</sup> and in our series, no patient died from hemorrhage.

Injury to an existing coronary artery graft may occur at the time of reoperation. Occasionally, a right coronary artery graft will lie directly beneath the sternum and is subject to injury with secondary sternotomy. This problem was likely a significant factor in the death of one of our patients. Attempts should be made at the time of primary coronary artery operations to position grafts away from the immediate retrosternal area.

The atrioventricular valve annulus poses a particular problem at reoperation. The annular tissue is generally less satisfactory for placement of sutures than it is at initial operations, and the risk of periprosthetic leak or heart block may be increased. A

(Continued on page 110)



# Respiratory Distress Syndrome

## *The Preventive Use of Glucocorticoids*

CHRIS C. HALLER, M.D. and CHARLES R. KING, M.D., *Kansas City, Kansas*

RESPIRATORY DISTRESS syndrome (RDS) is the most common cause of neonatal death in the industrialized world. In the United States, RDS accounts for 25,000 infant deaths each year.<sup>1</sup> In the past 20 years tremendous strides have been made in the treatment of RDS and this has resulted in a markedly reduced mortality rate. Unfortunately, some of these infants may have residual mental and motor disabilities that are either completely or partially due to hypoxia and subsequent neuronal damage. The progress in the prevention of hyaline membrane disease has been slower. The initial breakthrough in understanding this disease resulted from the discovery of surfactant<sup>2</sup> and the subsequent demonstration that there is an absence of this phospholipid in the lungs of infants who die of hyaline membrane disease.<sup>3</sup> Liggins<sup>4</sup> reported in 1969 that injection of pre-term ewes with corticosteroids could induce labor, and an unexpectedly high rate of survival for these premature lambs was observed. Histologically the lungs of these lambs were more mature than expected for their gestational age.

Following this initial observation there has been a flurry of publications attempting to elucidate the role of glucocorticoids in the prevention of RDS. This article is a review of the pertinent literature linking glucocorticoid therapy with pulmonary maturation. Emphasis is placed on the accumulated clinical data in order to aid the practicing physician to determine when the use of glucocorticoids is indicated for prevention of RDS, and what potential side effects may be expected from the use of such therapy.

### **Fetal Lung Development**

Human fetal lung development can be divided into three stages:<sup>5</sup> the glandular stage (conception to 16 wks gestation), the canalicular period (16-24 wks gestation), and the terminal sac period (24 wks to term). There is, in addition, postnatal pulmonary development until approximately age 8 yrs when adult maturation is complete.

During the glandular stage, the mesenchymal tis-

sue surrounding the proliferating buds of endoderm develops into cartilage, muscle, elastic, and lymphatic tissues. This endoderm gives rise to the trachea and the entire epithelial lining of the respiratory system. The canalicular period is marked by the delineation and vascularization of respiratory bronchioles. Bronchiolar formation commences and

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**Recent research indicates that glucocorticoids may decrease the risk of RDS in appropriately selected cases. Although long-term followup data on humans are not yet available, few adverse effects have been documented. Extensive review of the literature defines various ramifications.**

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there is progressive vascularization of the surrounding mesenchyme. Further division of the respiratory bronchioles into clusters of thin walled terminal sacculi occurs during the terminal sac period of lung development.

At birth only 8 per cent of the total number of adult alveoli are present, since only after birth do the terminal sacculi give rise to the alveolar ducts and alveoli. This division and proliferation continues until age 8 yrs when adult respiratory development is achieved.

During the first two months of gestation there is a separation of the capillary system from the developing primitive airways by loose mesenchymal tissue. The airways are lined with poorly differentiated columnar epithelium containing intracellular glycogen deposits and few cytoplasmic organelles. In the third and fourth months of gestation, this epithelium becomes cuboidal with increasing numbers of cytoplasmic organelles and a high content of intracellular glycogen. The fifth month is marked by the continued thinning of the respiratory epithelium and the beginning loss of intracellular glycogen.

Differentiation of the epithelial cells into type I and type II cells begins during the sixth month. The appearance of osmiophilic lamellar inclusion bodies (OLIBs) identifies the type II cells. By the seventh month of gestation, differentiation into type I and II

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From the Department of Obstetrics and Gynecology, University of Kansas School of Medicine, Kansas City, Kansas.

cells is complete. The glycogen content of the type II cells continues to decrease as the number of OLIBs increases. Vascularization of the epithelium of the respiratory saccules is complete by 8½ months gestation.

The development of mature surface activity in the fetal lung is associated with the appearance of these OLIBs where the intracellular synthesis of surfactant occurs. Radiolabeling of surfactant precursors such as choline, leucine, and galactose results in the incorporation of these labeled compounds into the OLIBs of type II cells. Subsequently radiolabeled intra-alveolar surfactant is identified. Surfactant production involves the uptake of phospholipid protein and polysaccharide precursors by the type II alveolar cells. These compounds are incorporated into the OLIBs which then synthesize surfactant and secrete it into the alveoli.

Surfactant is a complex mixture of lipid, protein, and carbohydrate which serves to reduce the surface tension of the alveolus. To maintain continuing respiratory function and prevent alveolar collapse during expiration, alveolar pressure must increase or the surface tension of the alveolus must decrease. If neither occurs, alveolar collapse will follow and continued pulmonary function will cease. This relationship is demonstrated mathematically by the law of LaPlace ( $P = 2T/R$ ). The pressure varies directly as the surface tension ( $2T$ ) and indirectly as the radius ( $R$ ) of the sphere. Surfactant lowers the alveolar surface tension as the alveolar diameter decreases with expiration and consequently a lower intra-alveolar air pressure is necessary to prevent collapse of the alveolus.

Avery and Mead examined the lungs of infants with hyaline membrane disease and discovered that they were deficient in surfactant. It was later shown that the lungs of infants with hyaline membrane disease have a higher surface tension than infants who do not have hyaline membrane disease. The theory linking hyaline membrane disease and primary surfactant soon followed.

Gluck and co-workers<sup>6</sup> demonstrated in 1967 that lecithin, a phospholipid, is the major ingredient in surfactant which accounts for its surface tension lowering properties. Two enzymatic pathways exist for the synthesis of pulmonary lecithin.<sup>7</sup> The first pathway incorporates choline with the enzymatic aid of choline phosphotransferase. The second pathway involves simple methylation. Gluck *et al.*<sup>8</sup> in 1974 proposed that Pathway II predominates until about 36 wks, when a surge in lecithin production takes place. During the final weeks of gestation, Pathway I is the primary avenue for lecithin production. The

activity of Pathway I is 10-50 times greater than Pathway II in the latter half of gestation, and the surge of Pathway I activity correlates with a simultaneous rise in the amniotic fluid lecithin/sphingomyelin ratio.<sup>9</sup>

The regulatory mechanisms that control lecithin synthesis are not well understood. Animal studies indicate the enzymes of Pathway I do not reach peak activity until late in gestation. The enzymatic changes are accompanied by a rise in endogenous cortisol levels, leading to speculation that cortisol plays a role in the induction of Pathway I enzymes and may also serve as a triggering factor in the late gestational rise in lecithin production.<sup>7</sup>

In 1972 and 1973, Blackburn and co-workers<sup>10, 11</sup> published studies implicating fetal corticosteroids in the induction of the biochemical changes of Pathway I. Lung maturation was inhibited by the inhibition of cellular mitosis. Fetal rats decapitated at 16 days gestation (term = 22 days) showed a marked lack of morphologic, functional, and cytologic differentiation in the lungs at term. The type II alveolar cells in particular had failed to undergo differentiation as demonstrated by massive accumulations of intracellular glycogen and a significant decrease in the number of OLIBs.

Biochemically, Farrel *et al.*<sup>12</sup> showed that fetal rats decapitated at 16 days gestation showed diminished incorporation of radiolabeled choline into lecithin until day 21. At term the incorporation of labeled choline was the same in the decapitated rats as in normal rats. Furthermore choline phosphotransferase activity was decreased in the decapitated rats but was above normal if these rats had received dexamethasone. This suggested that increased amounts of glucocorticoids are capable of inducing lung maturation, but corticosteroids may not be an absolute condition since the decapitated animals eventually exhibited normal rates of lecithin synthesis at term.

Ballard and Ballard<sup>13</sup> demonstrated that there are specific glucocorticoid receptor proteins in human fetal lung, and that glucocorticoids probably exert a direct maturational effect on the developing lung in the human fetus of 12-43 wks gestation. These receptors have the characteristics of specific receptors such as high affinity binding for glucocorticoids and a limited number of binding sites which can be saturated at physiologic concentrations of steroids.

### Lecithin/Sphingomyelin Ratio

The amniotic fluid lecithin/sphingomyelin (L/S) ratio is the standard determination used to assess fetal lung maturity. The ratio is determined by analy-



sis of amniotic fluid obtained via amniocentesis for its content of sphingomyelin and lecithin. As discussed previously, the lecithin content rises near term due to accelerated production in the fetal lungs. The numerical value obtained by determining this ratio is of predictive value in determining which infants will develop RDS on the basis of prematurity and those who will not. The fetus with an L/S ratio less than 2.0 may experience some degree of RDS and those with an L/S ratio of 2.0 or greater rarely develop RDS.<sup>14</sup> The precise demarcation between mature and immature may vary from one laboratory to another based on the specific techniques utilized. Each facility should therefore determine the specific ratio that indicates fetal maturity rather than rely on figures from the literature.

Gluck has demonstrated that dipalmitoyl lecithin is not reflected by the standard L/S ratio determination but is present in the acetone precipitable portion of amniotic fluid. Dipalmitoyl lecithin is the major surface active fraction of lecithin. It has the greatest effect upon intra-alveolar surface tension. Gluck proposed that transitional L/S ratio (1.5-2.0) is variably predictive of the development of RDS because of the unknown fraction of dipalmitoyl lecithin in the lecithin bulk in surfactant. For example, when the L/S ratio is 1.7 and the infant fails to develop RDS it may be that the infant had a higher portion of dipalmitoyl lecithin than usually associated with an L/S ratio of 1.7 since the dipalmitoyl lecithin fraction is not normally measured. Conversely, when the L/S ratio is 2.2 and the child develops RDS without the initiation of sepsis or aspiration, the dipalmitoyl lecithin level may be lower than normally associated with an L/S ratio of 2.2 and consequently the infant develops RDS because of inadequate active lecithin in the pulmonary surfactant. The transitionally mature fetal lung shows a variable response to asphyxia and other altered physiologic states depending on the adequacy of lecithin and probably more specifically dipalmitoyl lecithin content in surfactant. Gluck has proposed that a sufficient degree of asphyxia may inhibit surfactant production at the time of birth and slow the rapid rise in lecithin content upon which fetal lung maturity is so dependent. The development of RDS would follow.

### Human Studies

Liggins and Howie<sup>15</sup> in 1972 reported the first large clinical trial using antenatal betamethasone for the prevention of RDS in human infants. This was a double blind prospective study in which the women were separated into one group in spontaneous pre-

mature labor prior to 37 wks gestation and a second group who underwent elective premature induction of labor prior to 37 weeks gestation secondary to toxemia of pregnancy. In double blind fashion, the women in each group received either 12 mg betamethasone intramuscularly or an inactive control injection at the beginning of the study and 24 hrs later if delivery had not occurred. Inhibition of labor was attempted for 48-72 hours with ethanol and later salbutamol. Experimental and control groups were matched for gestational age, sex distribution, birth weight, and time interval between membrane rupture and delivery.

Liggins presented a followup to the 1972 study in 1976.<sup>16</sup> This subsequent report indicates several principles of glucocorticoid therapy identified by the previous study. First, the overall perinatal mortality rate in the treated group was 8.6 per cent vs 22.6 per cent in the controls, but the subgroup that seemed to benefit the most was that of infants 30-32 wks. The RDS incidence in this treated group (8.7%) was significantly better than in untreated controls (56.0%). At 28-30 weeks and 32-34 wks infants also showed reduced incidence of RDS but to a much less dramatic extent. Infants past 34 wks gestation who received betamethasone did not do significantly better than controls. Second, Liggins showed that at least 24 hrs must pass between the initial injection and the delivery for there to be a demonstrable clinical effect of a reduced incidence of RDS, and 48 hrs may be even better. Infants whose mothers received the initial two doses of betamethasone in the first 48 hrs, but did not deliver for at least seven days after the initial administration, did not do better than the controls who experienced similar circumstances. Repeat therapy on a weekly basis if delivery has not occurred may therefore be necessary.

Dluholucky<sup>17</sup> presented evidence in 1976 that hydrocortisone given intramuscularly at least 24 hrs prior to delivery as a single 100 mg injection was effective in mitigating the incidence and severity of RDS in premature infants when matched for sex, weight, gestational age, method of delivery or treatment after delivery with a control group that received no hydrocortisone and a group that received hydrocortisone for less than 24 hrs prior to delivery. He showed that there was no statistical difference in pCO<sub>2</sub> among the groups but that the group treated for more than 24 hrs was significantly less acidotic post partum. There was no speculation about a possible mechanism. Hydrocortisone did not reduce RDS incidence as markedly as betamethasone but this may have been a result of lower birthweights and



gestational ages, or that pharmacologically equivalent doses of steroids were not used, compared to those reported by Liggins.

Later in 1976, Caspi *et al.*<sup>18</sup> reported a trial of dexamethasone with control for sex, gestational age, and birthweight. RDS occurred less often in the treated group of infants (8.3%) than in the untreated controls (35.2%). Caspi demonstrated that during the first seven days of life neonatal mortality in the dexamethasone treated group was 6.6 per cent and in the control group, 33.0 per cent.

The following year Block *et al.*<sup>19</sup> confirmed Liggins and Howie's observations in a double blind study comparing the effects of betamethasone, methylprednisolone, and no treatment on the incidence of RDS in premature infants. Betamethasone was shown to be effective in reducing RDS in the infants of mothers with intact membranes upon admission (8.7% incidence), and an initial L/S ratio less than 2.0. Methylprednisolone was no more effective (RDS incidence 25.0%) than saline treated controls (RDS incidence 22.6%). This is indirect evidence that methylprednisolone does not readily cross the placenta. Methylprednisolone may therefore be the steroid of choice when effects upon the fetus must be minimized at the same time that the mother receives systemic steroid treatment. Block could not show a difference in RDS incidence between infants less than 32 wks gestation and those 33-37 wks gestation. The incidence of RDS was independent of the time between initial administration and delivery, with the betamethasone-treated group experiencing significantly less RDS, even when the duration of treatment was less than 24 hrs. Block concluded that this was further evidence that betamethasone and not some other cause was responsible for the enhanced fetal lung maturation. Block *et al.* demonstrated that if the L/S ratio was less than 2.0 before treatment, there was still less RDS in the betamethasone group than in the control and methylprednisolone groups. Further, a significant effect was only demonstrable when amniotic membranes were intact, since comparison of the betamethasone treated group (with ruptured membranes upon admission) to the untreated group (with ruptured membranes upon admission) revealed no difference in RDS occurrence. Block did not test for a rise in L/S ratio since Liggins and Howie reported that the L/S ratio may not be valid after initiation of procedures to enhance fetal lung maturity.<sup>15</sup> Block did not demonstrate the beneficial effect of betamethasone in the reduction of the overall perinatal death rate, postulating that the neonatal intensive

care unit used may have increased the survival rate and given a lower mortality rate than that experienced elsewhere. No attempt has been made in any studies to control for changing protocols or therapy in the neonatal ICU. The effect that such procedures may have on the incidence and severity of RDS is uncertain although presumably therapy is more efficacious with the passage of time.

In 1978, Thornfeldt *et al.*<sup>1</sup> reported the effects of dexamethasone on fetuses less than 36 wks gestation. The incidence of RDS was correlated with weight and gestational age. This study demonstrated that untreated, inadequately treated, and adequately treated infants showed comparable results to those of Liggins and Howie.<sup>15</sup> Only the infants who received 8 mg dexamethasone before delivery (inadequately treated) had a high RDS incidence (36.6%), whereas the adequately treated group (16 mg or more dexamethasone 24 hrs or more after initial administration) had an incidence of 11.2 per cent. Dexamethasone was shown to reduce RDS significantly over controls in all weight groups from 1000-2500 g, and for all gestational ages less than 36 wks.

Taeusch *et al.*<sup>20</sup> and Papageorgiou *et al.*<sup>21</sup> independently demonstrated the effectiveness of dexamethasone and betamethasone respectively in the reduction of the incidence of RDS. Both assessed the severity of RDS and perinatal deaths for control and treated patients. Glucocorticoids were found to be superior to placebo in reducing both severity of disease and death from RDS. Both studies were prospective, double blind studies which confirm the value of glucocorticoid administration to enhance fetal lung maturity and prevent or reduce the severity of RDS.

Ballard and colleagues<sup>22</sup> have also demonstrated the efficacy of betamethasone therapy. These results are in general agreement with those discussed above with some new information. RDS was reduced 50 per cent for infants treated two to ten days prior to delivery. Mortality decreased from 22.5 per cent for controls to less than 9 per cent for treated infants. Oxygen therapy for affected neonates required lower levels than control infants. This suggests that RDS when it occurs for treated infants is less severe than when no therapy is undertaken. These studies also suggest that an interval of 48 hrs prior to delivery enhances the success of betamethasone therapy. Infants of very low birth weights (below 750 gm) did not appear to benefit from steroid therapy. This failure to respond in the presence of marked immaturity may be related to lack of steroid receptors in the immature fetal lung.



Until mid-1978 virtually all human reports of fetal lung maturity and the use of glucocorticoids to induce such maturation had shown positive results. This evidence was apparent clinically, and biochemically the L/S ratio was demonstrated to increase following therapy. As with most forms of therapy, continued use has demonstrated conflict and limitation of the effectiveness and safety of glucocorticoid therapy for induction of fetal maturity.

Worthington and Smith<sup>23</sup> evaluated 81 premature newborn infants between 28 and 37 wks gestation for the effect of fetal asphyxia on the development of RDS. They used the method of Singer and Hastings to determine the degree of fetal asphyxia by calculating the cord artery blood buffer base (CABB), and defined asphyxia as a CABB value less than two standard deviations from the mean. Thirty-three per cent of the 81 babies were born with evidence of intrapartum asphyxia, but there was not a significant difference in the incidence of asphyxia according to gestational age. RDS developed in 100 per cent of the infants born at 32 weeks gestation or less, but in only 43 per cent of the infants without asphyxia of the same gestational age; unfortunately the number of infants studied was too low to allow statistical analysis. At more than 32 wks gestation, 32 per cent of the infants with asphyxia developed RDS whereas only 11 per cent without asphyxia developed RDS. This difference was judged to be statistically significant.

The results were then analyzed in relation to the L/S ratio. When the L/S ratio was 2.0 or less in the presence of asphyxia, 75 per cent of the infants developed RDS. When the L/S ratio was less than 2.0 and asphyxia was not present, only 40 per cent developed RDS. Finally, when the L/S ratio was greater than 2.0, RDS developed in 33 per cent with asphyxia, and in none of the infants without asphyxia. Worthington and Smith concluded that the presence of a sufficient amount of surfactant is indeed the primary factor in the prevention of RDS, but that a substantial number of false positives for the L/S ratio are a result of fetal asphyxia. This effect of asphyxia appears to be independent of gestational age.

Fetal asphyxia may well affect infants at a transitional stage of pulmonary maturity. As is the case with animal studies fetal asphyxia affects the pulmonary micro circulation with resultant inhibition of the synthesis and release of surfactant from the alveolar cell. The immature fetal lung is more susceptible to damage from asphyxia than the more mature lung, and as a result is more susceptible to RDS. When pulmonary maturation is borderline,

delivery of the fetus without asphyxia will provide the least interference with surfactant production and secretion.

A comparison of glucocorticoids for the prevention of RDS and nonstressed atraumatic delivery in the prevention of RDS was published in 1979 by Quirk.<sup>24</sup> This study was undertaken because there were previous reports of a correlation between fetal asphyxia in premature and marginally mature infants and the development of the respiratory distress syndrome.<sup>23, 25, 26</sup> This study was a double blind prospective study in which infants were matched for race, gestational age, and mode of delivery. Severity of RDS was graded based on the need for oxygen, mechanical ventilation, and neonatal death. There was no statistically significant difference in incidence or severity of RDS between the two groups. The incidence of RDS in the betamethasone-treated group was 16.5 per cent, and 14.1 per cent in the control group. The infants who developed RDS had a survival rate of 79 per cent in the betamethasone treated group and 67 per cent in the control group. Quirk reported that the overall infant survival rate for the four years prior to his study in his institution ranged from 19-25 per cent as compared to a survival rate that rose from 65-83 per cent in the four years during which this study was compiled. This observation suggests that significant improvements in neonatal survival may have occurred because of changes in the neonatal management of these high risk infants and not simply because of the use of steroid therapy.

Quirk concludes that avoidance of a stressful labor coupled with atraumatic delivery is as effective as glucocorticoids in the reduction of the incidence and severity of RDS. Certainly avoidances of traumatic delivery and fetal asphyxia will reduce the incidence of RDS; however, it is premature to assume that no additional benefit may be obtained with glucocorticoid therapy. This may be aided by the use of electronic and biochemical fetal monitoring and the liberal use of cesarean section; and the availability of a transitional neonatal intensive care unit will contribute to the reduction in the incidence of RDS. Block<sup>19</sup> previously had concluded that although betamethasone induced fetal lung maturation (since the incidence of RDS was lower in the treated group than in the untreated group), the final perinatal mortality was identical in both treated and untreated groups because of the neonatal intensive care unit utilized.

### Response of the L/S Ratio

Liggins and Howie<sup>15</sup> originally reported tentative



evidence that the amniotic fluid L/S ratio does not increase in response to glucocorticoid administration. They reported no consistent change in the L/S ratio following glucocorticoid therapy. This created a perplexing dilemma since a clinical response to glucocorticoid therapy as evidenced by a reduction in the incidence and mortality from RDS occurred, yet fetal lung maturation evidenced by change in the L/S ratio did not occur. The following year Spellacy *et al.*<sup>27</sup> demonstrated an effect of glucocorticoids on the L/S ratio; this was manifest by a significantly greater rise in the glucocorticoid treated group as compared to controls.

Administration of dexamethasone by Caspi and associates<sup>28</sup> to mothers with gestations of 34 wks or less resulted in 12 of 15 patients demonstrating a rise in the L/S ratio from an immature value (less than 2.0) to mature values (2.0 or more). Only one of 12 infants delivered prematurely developed RDS. This infant was a 1240 gm second twin delivered at the thirtieth week with an L/S ratio of 1.4. Six of these patients had premature rupture of the membranes (PROM). The effect of PROM on fetal lung maturity is controversial; a spurious rise in the L/S ratio which was attributed to dexamethasone could have occurred for these patients. One patient with PROM demonstrated no increase in the L/S ratio for the initial week following rupture, yet the L/S ratio rose sharply to maturity 48 hrs after dexamethasone administration.

Zuspan *et al.*<sup>29</sup> reported that when the L/S ratio was determined 48-72 hours after hydrocortisone administration, 12 of 17 subjects had an increase in the L/S ratio from pre-treatment to post-treatment value. The increase was considered statistically significant although the study population was composed of high risk pregnancies including cases of PROM, hypertension and placental insufficiency, situations that have been reported to be stressful to the fetus and associated with a decreased RDS incidence. In spite of these limitations, Zuspan *et al.* attributed the increased L/S ratio to the effect of hydrocortisone on the fetal lung maturation.

Utilizing a study composed mostly of high risk pregnancies (renal disease, hypertension, diabetes, Rh isoimmunization, and premature labor), Arias<sup>30</sup> reported a statistically significant rise from the initial L/S ratio after one week of betamethasone therapy in the treated vs the untreated patients. The mean post-therapy L/S ratio was not necessarily indicative of pulmonary maturity, *i.e.* the L/S ratio was less than 2.0 and only one of 20 patients had an L/S ratio of 2.0 or greater after betamethasone administration. The authors speculate that this may be due to the

nature of the glucocorticoid administered since this study and others<sup>8, 15, 31</sup> used betamethasone and did not show evidence of an increase in the L/S ratio to maturity, whereas Caspi *et al.*<sup>28</sup> and Zuspan *et al.*,<sup>29</sup> using dexamethasone or hydrocortisone, demonstrated an increased L/S ratio to a mature level after therapy. As cited above, the work of Block and associates<sup>19</sup> demonstrated a difference in the effectiveness of betamethasone and methylprednisolone in preventing RDS. Block, however, felt that methylprednisolone was inactive due either to impenetrability of the placenta or inactivity of the drug itself at cell receptors. Arias agrees that a differential activity of each drug may be present in a precise mechanism. The explanation for functional maturity (reduced RDS) without evidence of biochemical maturity (L/S ratio) is lacking.

Arias also reported a qualitative increase in the amount of dipalmitoyl lecithin after betamethasone therapy and no change in controls. Arias proposed that betamethasone includes a maturational effect by increasing dipalmitoyl lecithin and to a lesser extent the monosaturated lecithin level. Since the L/S ratio measures only monosaturated lecithin, low transitional L/S ratios after betamethasone therapy do not reflect the dipalmitoyl lecithin fraction, which may be increased enough to provide sufficient surface activity to prevent RDS. These findings are in agreement with the conclusions of Gluck.<sup>32</sup>

At this point it is speculative to say that dexamethasone induces a greater rise in the L/S ratio than betamethasone or hydrocortisone. The study populations reported have been small and factors predisposing to fetal maturity have been present. Changes in dipalmitoyl lecithin need further quantitation and study. It is unlikely that dexamethasone, betamethasone, or hydrocortisone affect different enzymatic systems to result in a higher content of dipalmitoyl lecithin in the surfactant of the fetus. Another component, such as intrapartum asphyxia, most likely accounts for the variability in response to glucocorticoids especially in the presence of a transitional L/S ratio.

### PROM and Lung Maturation

Gluck *et al.*<sup>14</sup> reported several conditions that are associated with accelerated lung maturation in the human fetus. These include premature rupture of the amniotic membranes (PROM), pre-eclampsia, renal disease, chronic hypertension, sickle cell disease, narcotic addiction, diabetes mellitus, circumvallate placenta, chronic retroplacental bleeding, and placental insufficiency. Naeye *et al.*<sup>33</sup> added to this list the presence of antenatal bacterial infection.



PROM is the most frequent and best studied of these conditions. The other factors probably are associated with enhanced fetal pulmonary maturation; however detailed controlled studies are lacking.

A sevenfold increase in the incidence of RDS with PROM of less than 12 hrs duration was reported by Yoon and Harper.<sup>34</sup> When delivery was less than 12 hrs after PROM, the incidence of RDS was 21.3 per cent whereas when delivery occurred 24 hrs or more after the PROM the incidence of RDS was 3.2 per cent. This was a statistically significant difference. The subjects of this study were poorly matched for gestational age; when this is done, there is not a significant difference in RDS incidence between the two groups.<sup>35</sup>

Similar results, reported by Bauer,<sup>36</sup> were a 57 per cent incidence of RDS in the group with PROM of less than 16 hrs duration and no instances of RDS in infants with a latent period greater than 16 hrs. Umbilical cord cortisol levels rose significantly with increasing length of the latent period. Cohen and associates<sup>37</sup> also demonstrated an elevation of cord cortisol levels in ten of 12 infants with PROM of 24 hrs or longer duration. As with the study of Yoon and Harper, gestational age was poorly matched for control and subject patients. Since gestational age is thought to be a major factor in the development of RDS, these results are subject to question.<sup>35</sup> Jones<sup>35</sup> was the first to deny the relationship between PROM and a lowered incidence of RDS. No relationship between PROM and the development of RDS was established for a matched gestational age study of 16,000 consecutive births. Other authors including Papageorgiou,<sup>21</sup> Dluholucky,<sup>17</sup> and Quirk<sup>24</sup> also were unable to demonstrate a beneficial effect of PROM on RDS. Other previous studies<sup>15, 16, 30</sup> have been re-evaluated for the influence of PROM on fetal lung maturation. Although PROM may have partially influenced the results, glucocorticoid therapy appears most important in this process.

When PROM occurred with a latent period of greater than 16 hrs and the infant was less than 32 wks gestational age, the incidence of RDS was significantly reduced.<sup>38</sup> When the latent period was greater than 16 hrs but the infant was of a gestational age greater than 32 wks, there was not a decreased incidence of RDS. To further confuse the picture, there was a lower mortality rate due to the RDS for the older infants than in the younger group. This of course indicates the tendency for RDS to be less severe with advancing gestational age. Additional evidence of the beneficial effect of PROM on the incidence of RDS was reported by Worthington<sup>39</sup>

and Block.<sup>19</sup> Worthington and coworkers demonstrated that PROM has a greater influence than the sex of the infant, fetal asphyxia, or delivery by cesarean section in reducing the incidence of RDS. They also failed to demonstrate an effect of a prolonged latent phase. Unanswered to date is whether the process that leads to PROM may also enhance fetal lung maturation. The reported discrepant effects of PROM on fetal pulmonary maturity would suggest that this may be the case, as Worthington has suggested.

In spite of the large number of studies undertaken, a consensus as to the effect of PROM on fetal lung maturation is not available. Animal studies have demonstrated increased cortisol production in response to *in utero* stress with a resultant reduction in RDS apparently due to increased surfactant production. This is an attractive mechanism by which to explain the enhanced pulmonary maturity following PROM in the human. Substantiating evidence to confirm this mechanism in humans is not yet complete. Although corticosteroid induction of enhanced surfactant production and secretion may reduce the incidence of RDS, a mechanism other than exogenous steroids may be beneficial for at least some patients. As discussed above, PROM may be such a factor.

Intrapartum fetal asphyxia as a factor in the pathogenesis of RDS may be more important than is generally recognized. Only Quirk *et al.*<sup>24</sup> attempted to evaluate intrapartum asphyxia as a factor in the incidence of RDS; but these data do not identify which infants were stressed or to what degree. Worthington's evaluation of intrapartum asphyxia and PROM demonstrated no statistical relationship with intrapartum asphyxia,<sup>39</sup> but correlation was demonstrated in a later study.<sup>23</sup> Further study is necessary with attempts to quantify the severity of fetal stress, such as reported by Singer and Hastings, and to control for PROM and glucocorticoid therapy.

## Complications

The complications from antenatal administration of glucocorticoids must be considered from both fetal and maternal aspects. The complications of glucocorticoid administration that affect the fetus are primarily related to effects on cell growth, differentiation, and maturation. The bulk of experimental investigation is confined to animal studies which makes extrapolation directly to the human difficult. Although one must agree with Johnson's cautious and potential evidence of problems for the



rhesis fetus exposed to doses comparable with the human fetus, definitive evidence of human fetal compromise has not been established.

Probably of greatest concern are the reports linking prenatal glucocorticoid therapy with altered CNS morphology. Animal studies indicate a reduction of brain weight and a decrease in the brain cholesterol/DNA ratio and impaired performance in tests of fine motor control. Growth inhibition resulting in runting and inhibited growth of the spleen and thymus are also seen, but catch-up growth for these organs has been attained by adulthood. Glucocorticoids produce cleft palate in rodent fetuses when given in large amounts in the first trimester.<sup>40</sup> Such teratogenic potential is absent for third trimester exposure.

Few adverse effects of glucocorticoids during human development have been documented. Liggins and Howie<sup>15</sup> noted that the risk of fetal death in mothers with proteinuria-edema-hypertension syndrome may be increased with prenatal glucocorticoid administration. The number of fetal deaths in the treated cases exceeded the deaths in the untreated cases but did not achieve a level of statistical significance. Nonetheless, Liggins and Howie reported this as a relative contraindication to glucocorticoid administration.<sup>15</sup> Zuspan *et al.*<sup>29</sup> reported that hypertension was the most common risk factor in their study on the effect of hydrocortisone. No fetal deaths occurred in this study nor was any maternal condition worsened by such therapy.

In 1979, Nochimson and Petrie<sup>41</sup> specifically studied the effect of betamethasone on hypertensive pregnancies. The incidence of RDS compared well with the rates experienced in other studies for similar gestational age and birthweight groups and it was concluded that there was a relative absence of problems in the patients with severe chronic hypertension. In this study all the fetal or neonatal deaths occurred in infants of mothers with pre-eclampsia, but pregnancy-related hypertension was not thought to be an absolute contraindication to glucocorticoid therapy for the induction of pulmonary maturity. The availability of skilled medical and nursing personnel in the management of neonates of such low birthweights and gestational ages was considered to be at least as important in the success of the management of these babies as the presence or absence of pre-eclampsia and the simultaneous administration of glucocorticoids.

Long term effects, especially of the CNS or lymphoreticular system, have received the most study in humans. Because of the relatively short period of

time since the introduction of glucocorticoids for reducing RDS, the followup period has not allowed these groups to reach puberty, but so far the studies by Fitzhardinge and associates<sup>42</sup> have shown no difference in the incidence and severity of infections, growth, immune competence, intelligence, social development, hearing, speech, fine motor development, or performance and adaptation between the hydrocortisone treated group and the control group. There was a significantly lower mean score in gross motor development in the treated group than in the untreated group in this study, but the significance and exact causality is unclear.<sup>42</sup>

In short, no firm documentation of long-term sequelae from short-term usage of glucocorticoid in the human infant is available in the literature, but long term comprehensive followup is not yet available.

Ballard and associates<sup>43</sup> indicate that the dosage schedule of Liggins and Howie<sup>15</sup> results in glucocorticoid levels that are in the high physiologic "stress" range. Such levels are adequate to accelerate fetal lung maturation since endogenous cortisol production in infants with RDS but not receiving glucocorticoids were similar. These levels represent a two-to-three fold elevation. Such "physiologic" levels would not be anticipated to have grave developmental effects since many normal pregnancies may achieve such levels.

Maternal concerns due to glucocorticoid therapy are frequently related to immune compromise. Kass *et al.*<sup>44</sup> have outlined four means by which glucocorticoids may encourage infection. These include: (1) diminished resistance to infection; (2) diminished clinical manifestations of infection; (3) activation of latent infections; and (4) aggravation of pre-existing infections.

Liggins and Howie<sup>15</sup> considered lowered resistance to infection of the fetus or mother as a distinct possibility. Since PROM with delay for 48 hrs to allow fetal lung maturation after glucocorticoid administration seemed a likely setup for ascending amnionitis, prophylactic antibiotics were given during the 48 hrs prior to delivery. There was not a significant difference in the development of infection in the betamethasone treated group compared to the untreated group. Papageorgiou<sup>21</sup> confirmed no difference in infection between the betamethasone treated group and a control group. Yet Taeusch *et al.*<sup>20</sup> determined the opposite with a significantly greater occurrence of neonatal and maternal infection in the dexamethasone treated group. Although the potential for sepsis may be enhanced with glucocorticoid therapy, major maternal complications



have rarely been reported. Careful surveillance should enable early diagnosis and therapy to minimize septic complications from glucocorticoid therapy.

The increasing use of betasympathomimetic agents to inhibit preterm labor has allowed the use of such tocolytic agents to coincide with glucocorticoid therapy. Jacobs *et al.*<sup>45</sup> have reported four previously healthy young patients who have received such therapy and developed pulmonary edema. This complication may be specifically related to betasympathomimetic therapy since patients receiving such therapy alone have developed this complication, but judicious management will minimize the potentially fatal nature of this complication.

Many potential hazards from the antenatal use of corticosteroids are suggested but few have been demonstrated as frequent clinical problems. The clinical use of glucocorticoid therapy requires careful consideration of the risk/benefit ratio of such therapy.<sup>46</sup> The use of the L/S ratio when available is potentially useful and when mature may allow the avoidance of glucocorticoid therapy. Depp has suggested that almost 20 per cent of infants from 28-33 weeks and more than one-third at 34-37 weeks have fetal pulmonary maturity. Such infants are unlikely to benefit from corticosteroid therapy. Although no definite fetal side effects have been clearly delineated, further study is necessary to clarify the possible associations discussed above.

What guidelines can be suggested for the use of glucocorticoid therapy?

1. Marked fetal immaturity (below 750 gm) does not appear to benefit from steroid therapy.
2. Fetal pulmonary maturity obtained by gestational age or the L/S ratio is not enhanced by therapy.
3. An interval of 48 hrs should be possible between the initiation of therapy and delivery.
4. There should be no maternal or fetal contraindications to continuation of the pregnancy to permit obtaining #3.
5. An additional effect of corticosteroids in the presence of PROM is still controversial.
6. Betamethasone in a dosage of 12mg IM at an interval of 24 hrs is the preferred therapy.
7. Hypoxia should be avoided during labor and delivery.
8. Consideration of the risk/benefit ratio for an individual patient is essential.
9. Full and frank patient participation in the potential decision to use corticosteroid therapy should be followed; it is essential that an informed

patient aid in making an enlightened decision for or against the use of corticosteroids.

### Summary

The prenatal use glucocorticoids in the prevention of the respiratory distress syndrome has a rational basis from animal models and available clinical data. More determinants in the pathogenesis of the respiratory distress syndrome need to be elucidated and characterized to allow optimal patient selection. The cautious use of glucocorticoids with full recognition of the risk/benefit ratio provides a useful tool for the reduction of neonatal morbidity and mortality from the respiratory distress syndrome.

References are available from the author.

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### CORRECTION

The name of the writer of the second letter in last month's Vox Dox column was misspelled. The correct name is David R. Mathews, M.D. Dr. Mathews is a third-year resident in Family Practice at UKSM-KC. The *Journal* regrets this error.

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# Continuous EEG Recording

## *A New Diagnostic Tool*

CHI-WAN LAI, M.D.; ANNETTE M. STRONG, R. EEG T. and  
DEWEY K. ZIEGLER, M.D., *Kansas City, Kansas*

THE IMPORTANCE of electroencephalography (EEG) in the diagnosis of seizure disorder cannot be over-emphasized. The limitation on its usefulness, however, has always been that the routine EEG recording lasts for only as long as 30 minutes, and the chance of catching a seizure during such a short period of recording is meager. Therefore, most of the EEG abnormality obtained is interictal, which is much less specific, and is sometimes of uncertain clinical significance.<sup>1</sup> EEG findings during a clinical seizure, however — the ictal abnormalities — are specific and diagnostic. Until recently, such recording was available only in a few major epilepsy centers equipped with EEG recorders that could transmit to a nearby machine with sophisticated computers, long term monitors with multiple cameras, and video-taping techniques.<sup>2, 3</sup>

The perfection of the portable cassette recorder enables the EEG laboratory to extend recording time for as long as 24 hours, and therefore greatly enhances the possibility of recording the ictal abnormality. Furthermore, the size of preamplifier in this system is as small as a finger-tip and can be attached to the scalp so securely that the patient can be allowed to perform routine daily activities. Such recording permits exposure to several possible provoking factors for the ictal event *e.g.* light, sound, emotional stress, and changes in posture. Maneuverability is particularly valuable when diagnosis of hysterical fit and reflex epilepsy are considered. Finally, electrocardiogram (EKG) leads can be installed in one of the four channels available in the cassette recording. For patients with syncope, the simultaneous long-term recording of EEG/EKG during the episode clearly differentiates a primary EKG event with secondary cerebral ischemia from a primary seizure disorder seen in the EEG. Such data are critical in patients with cardiac arrhythmias that masquerade as epilepsy.<sup>4</sup>

However, this device has limitations. In the com-

mercially available model, there are only four EEG channels. If EKG and time-even marker are utilized, there will be only two remaining channels to record the EEG. With the bipolar linkage, this can cover at most only four active electrodes. If the seizure occurs in an area not covered by the limited number

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**Electroencephalography (EEG) is of vital importance in the diagnosis of seizure disorder. A new device — the continuous EEG cassette recording — permits EEG recording for 24 hours or more during normal activities resulting in significantly expanded diagnostic capability.**

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of electrodes, there is substantial risk of failing to record the abnormality. For a focal seizure disorder, therefore, this type of recording is less satisfactory than for generalized seizure disorder. If the frequency of seizure or syncope has been less than once daily, the chance of recording an ictal event is limited. Another important limitation is the possibility for human error in reading. This prolonged record is continuously scanned on a fast-moving screen for at least 25 minutes, a taxing procedure with the ever-present possibility of overlooking some subtle abnormality. It is thus important to have a general screen as well as a detailed review of the tracing around the clinical event.

### **Experience at UKSM-KC**

Following is a summary of the state of the art in the use of this tool at UKSM-KC. The principles are derived from our review of the literature and our one-year experience with its use.

*Selection of cases:* With diagnosis of possible generalized convulsive disorder or hysterical fit, we recommend 24-hour recording only if the following are negative or equivocal: routine waking EEG including hyperventilation, photic stimulation followed by sleep-deprived EEG. If these recordings are negative, the 24-hour recording is indicated unless an episode without EEG abnormality has oc-

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curred during one of the routine recordings, suggesting a non-organic episode.

In case of episodic mental confusion, or lapse of memory, the protocol is similar to the above with nasopharyngeal leads added.

With episodes described as faint, black-out and dizziness, the routine EEG should include one channel of EKG continuous tracing,<sup>5</sup> and if baseline EEG and EKG are negative and no episode is recorded, 24-hour EEG/EKG should be considered.

If episodes are less frequent than once daily, a more prolonged recording can be done; cassettes and batteries can be changed every 24 hours until an episode is recorded.

*Determination of montages:* Because of the limited channels available in this recorder, the selection of the montages (arrangement of electrodes) is critical and is determined by the following:

1. Clinical symptoms: If generalized seizure — such as petit mal — is probable, use of bifrontal electrodes is essential (3 c/s spike-and-wave are usually bilateral synchronous with bifrontal predominance). If diagnosis of partial seizure (psychomotor seizure — the new term being “complex partial epilepsy”) is considered, then anterior temporal electrodes must be used.

2. If the routine record shows equivocal abnormality in a certain area of the scalp, the montage should be concentrated in that area.

3. To avoid the high voltage artifacts due to eye movement, chewing and talking, electrodes should not be placed near the eyes and temporal muscles.

*Preparation of the patient:* Electrodes must be applied with collodion, which can hold for 24 hours. EKG electrodes (silver diaphoretic) are applied at V6 precordial lead. The small recorder (Oxford-series 4:24), measuring 3½ by 5½ inches, is carried comfortably by the patient on a belt or shoulder strap (Figure 1). A C-120 cassette can record the 24-hour EEG with or without EKG. To determine if the system is operating correctly, the recorder can be plugged into a Grass Model 8 EEG to print out ongoing activity. The patient is then asked to blink, roll eyes, chew, and swallow for subsequent identification.

The patient is given a diary in which to log all events of altered sensation or consciousness. The patient also logs all other activities *e.g.* sleeping, eating and voiding, and is advised not to chew gum or bathe during the recording period. If an event marker is installed in the recorder, the patient is instructed to push the button whenever an episode is observed; the tape then stops at that particular event



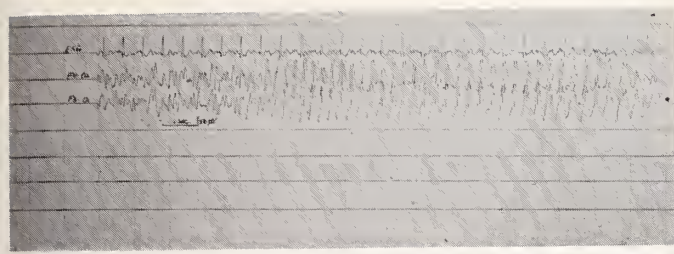
Figure 1. Ambulatory patient wearing the cassette recorder on his belt.

when it is subsequently displayed, enabling the electroencephalographer to more easily scrutinize that particular segment of EEG or EEG/EKG.

If any particular stimulus is thought to induce an episode, the patient should be exposed to that particular condition in an attempt to reproduce the event and record its occurrence simultaneously with EEG and EKG.

*Experience in use:* The cassette is reviewed in the display unit (Oxford PMD-12) which has the capacity of different frames of time span (eight or 16 seconds), different speeds (20X, 60X) and the ability to play forward, fast forward, backpage, and rewind. With the fast speed of display (60X, 16 seconds), the entire 24-hour tape can be reviewed in 24 minutes. The record during any episode as signaled by the event marker or noted in the diary is scrutinized with particular care. It takes an average of 60-90 minutes to read one 24-hour recording. If any abnormality is noted on the screen, we print out





**Figure 2.** EEG (channels 2 and 3) and EKG (channel 1) in a 14-year-old male known to have cerebral palsy with grand mal seizure for years, and recently-developed "staring spells." EEG during episode shows 3 cps high voltage spike-and-wave discharges.

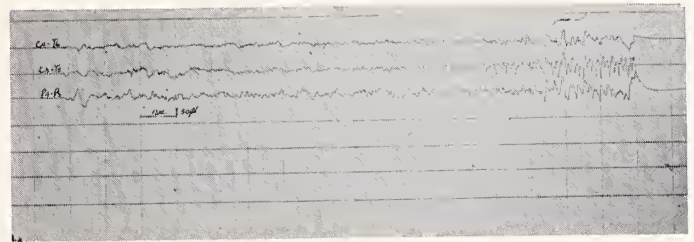
that section of EEG or EEG/EKG on standard EEG paper through the EEG machine, and that record is retained as a permanent file. The used cassette can then be erased and re-used.

The sensitivity of each individual channel must be carefully standardized and checked with the prestrip of calibration. The limitations of this particular type of recording must be constantly borne in mind (limited coverage, artifacts) to avoid over-interpretation.

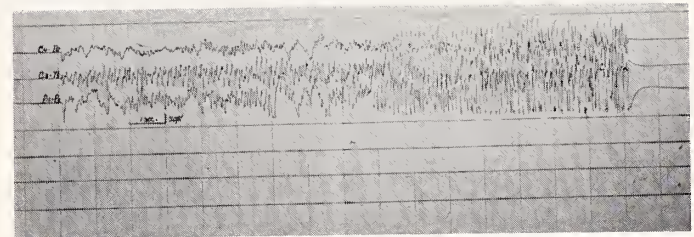
### Clinical Application

**Seizure disorder:** If a firm history of grand mal seizure (tonic-clonic movements, loss of consciousness, and incontinence) is obtained, the 24-hour recording is unnecessary, even if the routine EEG is negative (as it often is). With patients experiencing lapse of memory or absences, however, the history often is not diagnostic, and routine EEG even with hyperventilation may fail to show electrical or clinical seizure. In this case, an extended recording up to 24 hours can often pick up the episode and demonstrate the diagnostic 3 c/s spike-and-wave pattern of petit mal (*Figure 2*). Of special interest are cases where epileptiform abnormalities in EEG are found when a seizure diagnosis is considered unlikely.<sup>6</sup> In a recent case, a young deaf-mute woman had had episodes of temper outburst and had been treated with various combinations of anticonvulsants because of previous EEG paroxysmal abnormalities. The 24-hour EEG recording clearly demonstrated that the temper event was not accompanied by EEG paroxysmal abnormality and, conversely, there was no clinical event noted during EEG paroxysms. The dissociation between electrical and clinical phenomena was demonstrated and helped to solve the diagnostic problems.

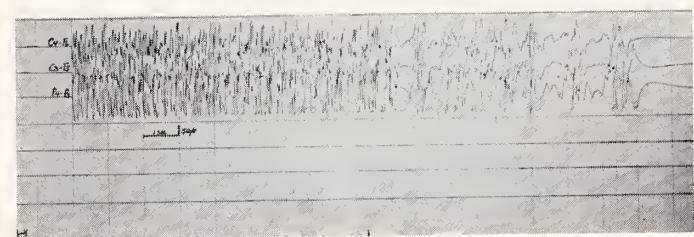
**Hysterical fit:** In this group of patients, the EEG during clinical events demonstrates only marked



a



b



c



d

**Figure 3.** EEG (channels 2 and 3) and EKG (channel 1) in an 18-year-old female with diagnosis of possible hysterical fits. The EEG recording during one of the episodes shows seizure discharges beginning in the left temporal lobe and rapidly developing into generalized seizure with subsequent postictal slowing (a, b, c, and d are continuous strips).

movement artifacts without any other EEG abnormality or recruiting rhythm (which is often seen prior to a true seizure). Also there is no postictal change following the episode, unlike what is seen in seizures. Conversely, in one patient previously considered to be hysterical, 24-hour recording shows definite electrical evidence of seizure beginning in the left temporal lobe and rapidly developing into a generalized seizure discharge, and thus makes the diagnosis (*Figure 3*).

**Syncope:** In one case where seizure diagnosis had been seriously considered, we documented a 5.5-



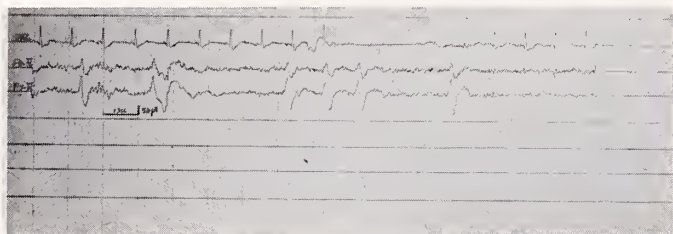


Figure 4. EKG (channel 1) and EEG (channels 2 and 3) in a 49-year-old male with episodes of dizziness or fainting. In asymptomatic period, EEG shows no abnormality, but EKG shows 4.5 seconds of asystole.

second period of asystole followed by diffuse EEG slow wave activity, typical of cerebral ischemia.<sup>7</sup> Another patient, in prolonged recording, showed episodes of asystole (with or without symptoms but without EEG abnormality), and this finding alerted us to pursue a cardiology workup (Figure 4).

### Summary

A new diagnostic device — the continuous EEG cassette recording — has been discussed with limitations and pitfalls of the procedure. This new device enables the EEG laboratory to record the EEG continuously for 24 hours or longer during normal activities. The extended length of recording enhances the chances of (1) diagnosing ictal abnormality; (2) differentiating between seizure disorder and hysterical fit; and (3) differentiating the diagnosis of syncope and seizure.

### References

1. Daly, D. D.: Use of the EEG in the diagnosis of epileptic seizure and nonepileptic disorders. *Current Practice of Clinical Electroencephalography* (Klass, D. W. and Daly, D. D., eds.). Raven Press, New York, pp. 221-268, 1979.
2. Penry, J. K.; Porter, R. J. and Dreifuss, F. E.: Simultaneous recording of absence seizures with video tape and EEG. *Brain* 98:427-440, 1975.
3. Ives, J. R.; Thompson, C. J. and Wood, J. F.: Acquisition by telemetry and computer analysis of 4-channel long term EEG recordings from patients subject to "petit-mal" absence attacks. *Electroencephalogr. Clin. Neurophysiol.* 24:665-668, 1973.
4. Schott, G. D.; McLeod, A. A. and Jewitt, D. E.: Cardiac arrhythmias that masquerade as epilepsy. *Br. Med. J.* 1:1454-1457, 1977.
5. Espinosa, R. E.; Klass, D. W. and Maloney, J. D.: Contribution of electroencephalogram in monitoring cardiac dysrhythmias. *Mayo Clin. Proc.* 53:119-122, 1978.
6. Zivin, L. and Ajmore Marson, C.: Incidence and prognostic significance of epileptiform activity in the EEG of non-epileptic subjects. *Brain* 31:751-778, 1968.
7. Lai, C. W. and Ziegler, D. K.: Syncope problem solved by continuous ambulatory simultaneous EEG/EKG recording. *Neurology* (in press).

## Reoperative Cardiac Surgery

(Continued from page 97)

large, dominant circumflex coronary artery may pose an additional problem during mitral valve replacement. The circumflex coronary artery lies in close proximity to the annulus of the posterior leaflet of the mitral valve. Injury to this artery occurred in one of our patients and, although coronary artery bypass grafting restored arterial continuity, was likely a contributing factor in this patient's death. Knowledge of the circumflex coronary artery anatomy and location from preoperative coronary arteriography is very helpful. Excision of the prosthetic valve should include no annular tissue, especially posteriorly.

### Summary

From a review of both our data and the recent literature, we feel the following conclusions can be drawn:

1. The operative mortality rate is low for secondary aortic valve replacement in those patients in whom prosthetic endocarditis or acute prosthetic dysfunction is not present.
2. The risk of secondary mitral valve replacement appears to be somewhat higher than that for aortic valve replacement, and this risk may be increased with required additional procedures such as coronary artery bypass grafting and multiple valve replacement or repair.
3. Although there are increased technical difficulties involved in reoperation, the operative risk from these technical problems is not unduly high.

### References

1. Parr, G. V. S.; Kirklin, J. W. and Blackstone, E. H.: The early risk of re-replacement of aortic valves. *Ann. Thor. Surg.* 23:319, 1977.
2. Sandza, J. G. et al.: Replacement of prosthetic heart valves. *J. Thor. Cardiovasc. Surg.* 74:864, 1977.
3. Shemin, R. J. et al.: Prosthetic aortic valves. *Arch. Surg.* 114:63, 1979.
4. Rossiter, S. J. et al.: Aortic and mitral prosthetic valve reoperations. *Arch. Surg.* 114:1281, 1979.
5. Syracuse, D. C.; Bowman, F. O. and Malm, J. R.: Prosthetic valvular reoperations. *J. Thor. Cardiovasc. Surg.* 77:3, 1979.
6. Macmanus, Q., et al.: Surgical considerations in patients undergoing repeat median sternotomy. *J. Thor. Cardiovasc. Surg.* 69:138, 1975.
7. Culliford, A. T. and Spencer, F. C.: Guidelines for safely opening a previous sternotomy incision. *J. Thor. Cardiovasc. Surg.* 78:633, 1979.

# Malignant Melanoma

## *Case Reports of Vulvar Involvement*

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MALIGNANT MELANOMA continues to be a much misunderstood disease. The prognosis is considered poor and treatment is often incomplete because of this predetermined defeatist attitude. Melanoma of the vulva is a rare tumor, but in large treatment centers may make up 8-11 per cent of all vulvar malignancies. Presented here are six recent cases treated at the University of Kansas Medical Center with a discussion of the incidence, pathology and staging, and treatment and prognosis.

### Case Reports

*Case One:* An 18-year-old female had an incidental removal of a nevus on the left vulva at the time of delivery. Diagnosis of junctional nevus with malignant change was made. Radical vulvectomy with bilateral groin lymphadenectomy was performed. There was no further evidence of tumor and the patient is doing well.

*Case Two:* A 19-year-old female noticed a mole on the right vulva one year earlier during pregnancy. One month prior to diagnosis she developed pain in this mole. Excision resulted in a diagnosis of malignant melanoma. She underwent exploratory laparotomy, pelvic node biopsy, and superficial groin node dissection with a radical vulvectomy.

*Case Three:* A 75-year-old female was noted at the time of urethral dilation to have a lesion on the posterior forchette. Biopsy showed a Clark's level III melanoma. She underwent an exploratory laparotomy with deep node dissection, bilateral groin nodes and radical vulvectomy. Three years later she is doing well.

*Case Four:* A 52-year-old female presented with a 3 x 4 cm mass around the clitoris. Initial diagnosis of stage IV undifferentiated squamous cell cancer was made after chest x-ray demonstrated tumor. Following review of slides, the diagnosis of amelanotic melanoma was made. A palliative partial vulvectomy was performed followed by chemotherapy. She later succumbed to her disease.

*Case Five:* A 73-year-old female complained of a sore for two months. Biopsy diagnosis of superficial spreading malignant melanoma, level II, was made. She underwent a radical vulvectomy with superficial and deep node dissection. All nodes were free of tumor. She is doing well two years later.

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**Malignant melanoma of the vulva is rare, but may comprise a significant percentage of vulvar malignancies. Six recent cases are presented and discussed.**

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*Case Six:* A 40-year-old female was first seen nine years earlier with superficial spreading type of melanoma. She declined radical vulvectomy at that time, but had a wide local excision and inguinal node dissection. She re-presented with recurrent melanoma on the opposite labia. Metastatic work-up yielded negative results. A radical vulvectomy was performed with depth of invasion 0.85 mm.

The vulva has an unusual disposition for the development of malignant melanomas. Although it makes up only 1-2 per cent of the body surface and has fewer than its share of nevi at 0.1 per cent, it has 5 per cent of all melanomas.<sup>1</sup> The reason for the higher incidence of malignant changes is unknown, but is likely to be related to the percentage of perineal nevi that are junctional. Junctional nevi have the melanocytes located at the dermis-epidermis interface. If these melanocytes drop off into the dermis and become nevus cells, then the nevus becomes compound. When the melanocytes stop this activity and the junctional activity arrests, the nevus becomes intradermal. Clinically, there is little difference between the appearance of a compound and a mature nevus. Ten to twelve per cent of nevi on the skin are compound, although the percentage on the vulva is much less.

Because there is a higher percentage of vulvar nevi that undergo malignant change it has been recommended that all nevi on the vulva be excised. Those on the mucosal membrane and labia minora

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and paraclitoral should be excised because these appear to be the preferred sites for malignancy and are most suspect. When a nevus is excised a normal margin should be obtained, but "wide" excision is not necessary in that if the lesion is malignant then a radical procedure will be indicated. A previous wide local excision delays the definitive therapy if there is wound infection or breakdown. If the lesion is quite large, an incisional biopsy is indicated to make the diagnosis. The most frequent complaints of the patients are: enlarging mole pruritis, bleeding, and a sore that is not healing. However, the diagnosis is frequently made on routine examination. The diagnosis of an amelanotic melanoma may be more difficult to make clinically, and this tumor is often mistaken for a squamous cell tumor. Biopsy should clarify this diagnosis. Because this tumor frequently develops in the young patient, age is not a deterrent to biopsy, nor is pregnancy. Pigmented lesions do darken in pregnancy, but pathologic diagnosis is the only way to differentiate. Two of our patients had recently completed pregnancy.

Pathological classification and grading is very important for treatment and prognosis. There are three basic types of malignant melanomas. The lentigo malignant type develops within a Hutchinson melanotic freckle and grows radically. After this radical growth phase, cells penetrate into the dermis in a vertical growth phase. The superficial spreading type — or more accurately, malignant melanoma with radical growth phase — makes up most cutaneous melanomas. These grow in the epidermis and invade the papillary dermis. The nodular type has no radical intraepidermal growth phase. This lesion is always palpable.<sup>2</sup> It must be noted that the term "superficial spreading type" is very misleading. These may extend to any level and carry a prognosis equal with the other types stage for stage. No compromise in treatment should exist because of the word "superficial" when it is used in this way.

The most prognostic factor histologically is the level of extension of the melanoma. Clark's levels<sup>3, 4</sup> are the most commonly used classification. The levels are:

- Level I — Lesions involving only the epidermis (not cancer).
- Level II — Invasion of papillary dermis.
- Level III — Invasion involving the full thickness of and filling and expanding the papillary dermis; abutting upon, but not penetrating the reticular dermis.
- Level IV — Invasion into reticular dermis.
- Level V — Invasion into the subcutaneous tissue.

Because of the difference in skin thickness throughout the body it has been suggested by the American Joint Committee on staging that thickness of the level as described by Breslow be included. His levels are: (1) 0.75 mm or less; (2) 0.76-1.50 mm; (3) 1.51-3.0 mm; and (4) more than 3.0 mm. Thus both Clark's levels and the thickness should be described in the pathology report. Chung *et al.* felt that the lack of papillary dermis in the squamous mucous membranes of the labia made it difficult to use Clark's levels. They used his Level I and IV, but Levels II, III, and IV were invasion of 1 mm or less, 1-2 mm, and more than 2 mm respectively.<sup>5</sup>

The clinical staging for melanomas of the vulva is by FIGO and is the same as that used for other vulvar cancers:

- Stage I — All lesions confined to the vulva and less than 2 cm. No nodes.
- Stage II — All lesions confined to the vulva but greater than 2 cm. No nodes.
- Stage III — Involvement of urethra or vagina; or suspicious nodes.
- Stage IV — Fixed nodes or bladder or rectal involvement, or distant metastasis.

The TNM system is used to describe these stages.

Generally, with the use of levels and staging a good correlation may be obtained with clinical prognosis, but melanomas are notorious for unpredictable behavior, such as early dissemination, repeated recurrences without dissemination, and spontaneous regression. The five-year survival is a poor predictor in this malignancy in that 10-15 per cent may later die from the disease.

The treatment for malignant melanoma is primarily surgical. The vulva lends itself well to en bloc removal with regional lymph node dissection. This generally is the procedure of choice with the deep pelvic lymph dissection, also performed with the inguinal nodes. Immunotherapy is also being used after surgery in patients with early levels and no gross spread. This may be by active immunotherapy, passive immunotherapy, or by augmenting the number of sensitized lymphocytes. Chemotherapy is used in those with widely spread disease, but has shown little success to date.

## Conclusions

Junctional nevi on the vulva are at increased risk for malignant change. The prophylactic excision of nevi on vulvar mucous membrane is indicated. Any suspicious lesion of the vulva requires biopsy, re-

(Continued on page 121)

# Managing Morbid Obesity

## *A Review of Surgical Procedures*

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MORBID OBESITY has been arbitrarily defined as that state in which the patient weighs in excess of at least 100 pounds more than ideal weight. Patients in this condition are at increased risk for sudden death;<sup>1</sup> they suffer an increased incidence of diabetes, hypertension, respiratory problems, gallstones, and other diseases. Additionally, these patients often suffer from severe psychosocial problems—they have difficulty with interpersonal relationships, employment, and adjustment to society. Because of the increased morbidity associated with being grossly overweight, weight reduction becomes a significant matter to these patients. Medical management of morbid obesity is almost universally unsatisfactory; most patients are able to lose a relatively small amount of weight but are unable to maintain this loss. The inadequacy of medical management of obesity has resulted in the development of several surgical procedures to assist these patients in permanent weight loss. This report details our experience at the University of Kansas School of Medicine (UKSM) in the surgical management of morbid obesity.

### History

The first major attempts at surgical correction of morbid obesity were reported by Payne in 1954. Payne described a jejunoileal bypass which was performed in an end-to-side manner. This procedure produced weight loss in a significant number of patients.<sup>2</sup> However, small bowel bypass is associated with significant long-term complications and therefore is not ideally suited to the management of patients with long-standing chronic disease such as obesity.<sup>3</sup>

In 1969, Mason and Ito<sup>4</sup> described a 90 per cent gastric bypass for weight reduction in patients who were morbidly obese. Since that time gastric bypass has become the generally accepted procedure for weight reduction in the United States.

### Small Bowel Bypass

Our experience at UKSM began in 1973 when we performed our first jejunoileal bypass for morbid obesity. The experience with jejunoileal bypass was generally considered to be unsatisfactory. Jewell, *et al.*<sup>3</sup> reported our experience with 54 patients; 60 per

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**Recent experience at UKSM indicates that gastric bypass surgery offers a low-risk alternative to morbid obesity in selected patients. Continuing evaluation will facilitate appropriate patient selection and define long-term benefits.**

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cent of the patients who were operated on had a poor result either because of severe complications or unsatisfactory weight loss. The complications were those generally experienced in other series of jejunoileal bypass. They included severe diarrhea, electrolyte imbalances, renal calculi, arthritis, and even vitamin deficiencies. Fifteen patients had an unsatisfactory weight loss. At least 15 of the original small bowel bypass patients have undergone takedown of the jejunoileal bypass. At the present time, jejunoileal bypass is not performed at our institution.

### Takedown

Our experience has shown us that patients who require takedown of the small bowel bypass will rapidly regain weight if gastric bypass is not performed. At the present time we recommend some type of gastric bypass be performed in patients who undergo takedown of a small bowel bypass.<sup>5</sup> The operation can be performed safely and with little morbidity or mortality.

### Gastric Bypass

In November 1973, the first gastric bypass was performed at UKSM. From that time until September 1, 1980, we have performed 730 gastric bypass operations or modified gastric bypass procedures. Nearly 85 per cent of patients are female, the aver-

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age weight is 267 pounds, and patients are generally 20-35 years of age. However, patients in their teens and in their 60s have undergone gastric bypass, and the results have been generally satisfactory. The average weight loss in patients followed for at least a year is approximately 30 per cent of original weight.

Four different types of gastric bypass have been performed here. We first performed an operation similar to Mason's original gastric bypass in which the stomach was divided and anastomosed in retrocolic fashion to the jejunum. The second-generation operations consisted of gastric partitioning rather than gastric division and the stomach was anastomosed to the jejunum, either by an anacolic loop, gastrojejunostomy, or in some cases by a Roux-en-Y gastrojejunostomy. At present the operation consists of gastric partitioning with creation of a gastrogastrostomy. The results of the various operations have been satisfactory and the weight loss basically falls within the same range of approximately 30-35 per cent of the original weight in patients followed for one year. In our total experience of 730 patients, there have been nine deaths during the immediate postoperative period. However, in our most recent 300 cases, there has been only one death, and that was in a patient with severe pulmonary hypertension. Our complication rate compares favorably with Mason and other groups, atelectasis being the most common postoperative problem. Wound infections have been relatively uncommon — approximately 4 per cent. The major complication is leak from the anastomosis or from the proximal pouch with subsequent abscess formation. With the present gastric partition with gastrogastrostomy, there have been three leaks from the proximal pouch, which resulted in an extended stay in the hospital for the patient, but there have been no mortalities.

## Revision

One of the long-term complications of gastric bypass is failure to lose weight. In May 1980, we reported our experience with revision of gastric bypass. At that time, we had revised 54 of 630 bypasses with no operative mortality and with approximately a 17 per cent operative complication rate. These patients were revised for a mechanical reason: either the proximal pouch was enlarged, or the anastomosis had become enlarged, or the staple line had become disrupted. Ninety per cent of the patients who underwent revision experienced a significant weight loss following the revision.<sup>6</sup>

## Future Surgical Procedure

At the present time it appears that some form of gastric bypass, gastroplasty, or gastrogastrostomy will become the operation of choice in the management of patients with morbid obesity. All of these operations embody the basic principles of Mason's original gastric bypass, which was to create a 50-60 cc gastric pouch with a 1.0-1.2 cm gastric outlet. The gastric partition must be of such construction that it will be permanent. One significant question that persists in the area of obesity surgery is which patients should be selected to undergo the operation. The present criteria for selection for gastric bypass — namely that the patient must be at least 100 pounds over ideal weight and there can be no medical contraindication to the operation — do not seem completely adequate because 20-25 per cent of these patients fail to experience a satisfactory weight loss. The patient must be psychologically capable of tolerating the drastic lifestyle change that occurs following gastric bypass. At the present time, the role of psychological evaluation in patients who are morbidly obese has not been evaluated thoroughly. We feel that psychological evaluation will become a significant component of the workup in patients who are morbidly obese, and we are at present evaluating our results.

## Conclusion

Patients who are morbidly obese suffer significant risk to their health as well as a tremendous psychosocial burden. At the present time, weight reduction may be accomplished by surgical intervention with minimal risk to the patient. However, long-term followup and careful evaluation must be carried out to determine the long-term benefits to these patients following weight reduction.

## References

1. Drenick, E. J.; Bale, G. S.; Seltzer, F. and Johnson, D. G.: Excessive mortality and causes of death in morbidly obese men. *JAMA* 243:443-445, 1980.
2. Payne, J. H. and DeWind, L. T.: Surgical treatment of obesity. *Am. J. Surg.* 118:141-147, 1969.
3. Jewell, W. R.; Hermreck, A. S. and Hardin, C. A.: Complications of jejunoileal bypass for morbid obesity. *Arch. Surg.* 110:1039-1042, 1975.
4. Mason, E. E. and Ito, C.: Gastric bypass. *Ann. Surg.* 170:329, 1969.
5. Hitchcock, C. T.; Jewell, W. R.; Hardin, C. A. and Hermreck, A. S.: Management of the morbidly obese patient after small bowel bypass failure. *Surgery* 82:356-361, 1977.
6. MacArthur, R. I. *et al.*: Revision of gastric bypass. *Am. J. Surg.* (In Press).

# Congenital Heart Disease

## *Developmental and Neurological Evaluation in Preschool Children*

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DELAY of growth and development is often a major consequence of congenital heart disease (CHD) in infancy and childhood.<sup>1-5</sup> Although a number of studies have examined the growth of children with congenital heart disease, very few have attempted to evaluate the developmental and neurological status of these children during preschool years. As more infants undergo earlier surgical palliation or correction, the goal of treatment must be not only saving of lives, but also prevention of adverse effects on growth, development, and intellectual abilities. Only with earlier recognition of these problems can intervention programs be made effective.

The purpose of this study was to examine the developmental and neurological status in preschool children with critical congenital heart disease. In this high risk group, early identification of developmental delay and neurological impairment may help health care professionals in recommending comprehensive intervention. The present report represents data on the developmental and neurological evaluation of 13 preschool children with critical congenital heart disease.

### Subjects

The subjects of this study are 13 preschool children seen at the University of Kansas Medical Center with the diagnosis of critical congenital heart disease in infancy. Critical congenital heart disease is defined as any life-threatening cardiovascular anomaly that requires cardiac catheterization and/or surgery during the first year of life. Not included in this study are patients who have, in addition, recognizable chromosomal or neurological syndromes such as Down's syndrome or rubella.

### Methods

Children included in this study with parental as-

sent were evaluated in the outpatient clinic or in the inpatient service at the University of Kansas Medical Center. Included in the evaluation were: the determination of height, weight, occipito-frontal head circumference (OFC); Denver Developmental Screening Test (DDST); and the standard neuro-

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**Children with critical congenital heart disease are at high risk for neurological problems, and early recognition is of critical importance. As an increasing number of these children undergo corrective or palliative surgery early in life, the long range goal for management must include appropriate developmental stimulation programs to improve the quality of life for the children and their families.**

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logical examination. All data were collected by the examiner without prior knowledge of their cardiac diagnosis and their previous clinical history. In addition, their records were reviewed by the nurse and pediatric cardiologist on the team, to determine the nature of the cardiac diagnosis, number of hospitalizations, age at surgery, arterial oxygen tension (PO<sub>2</sub>) at the time of first cardiac catheterization, presence of heart failure during infancy, and presence of cyanosis or congestive heart failure at the time of the study.

The DDST is a developmental screening tool with test items that are grouped according to four functions: gross motor, fine motor, language, and personal-social abilities.<sup>6</sup> The results of the developmental tests were evaluated by the examiner and by another member of the study team to determine concurrence of *pass* or *fail* on the test items. Categorized as *fail* items are those showing more than six months delay in attaining the test items in comparison to chronological age.

A standard neurological examination included evaluation of motor, sensory, cranial nerves, cerebellar, and reflex functions.

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TABLE I  
SUMMARY OF CLINICAL DATA, GROWTH, DEVELOPMENTAL AND NEUROLOGICAL EVALUATION

Pt's Age at Dx	Anatomical Dx <sup>1</sup>	Age at Surgery	No. of Hospitalizations	Age at Eval.	Growth <sup>2</sup>			Developmental Evaluation DDST <sup>3</sup>	Neurological Evaluation <sup>4</sup>
					Ht.	Wt.	OFC		
1 8 wks	PDA Hemitruncus PAH	2½ mos	3	48 mos	N	N	N	P	(+)
2 3 days	PDA COA AS (vascular)	10 days 15 mos	5	37 mos	N	N	N	P	(-)
3 9 days	TA VSD ASD PS	3 mos 48 mos	10	50 mos	↓	↓	↓	P	(+)
4 1 day	TOF	1 day	4	42 mos	↓	↓	↓	F (GM, Lang)	(+)
5 6 mos	PDA TAVR	5 mos	2	41 mos	N	N	N	P	(+)
6 4 mos	VSD PAH PS	8 mos	5	42 mos	N	↓	↓	P	(-)
7 8 mos	TOF ASD Dextrocardia	Not performed	4	33 mos	N	N	↓	P	(-)
8 6 wks	AS (valvular)	2 mos	5	56 mos	↓	N	↓	P	(-)
9 3 wks	TOF	12 mos	6	27 mos	↓	↓	↓	F (PS, GM)	(+)
10 6 days	PPS ASD	Not performed	1	25 mos	↓	↓	↓	F (FM, GM)	(+)
11 1 day	TGA	birth	9	33 mos	↓	↓	↓	F (GM)	(+)
12 17 days	VSD PAH	Not performed	5	39 mos	N	N	N	P	(+)
13 6 days	TGA	11 days 16 mos 21 mos	6	30 mos	N	N	N	P	(+)

<sup>1</sup> ASD — atrial septal defect, AS — aortic stenosis, COA — coarctation of aorta, PDA — patent ductus arteriosus, PAH — pulmonary artery hypertension, PS — pulmonic stenosis, TGA — transposition great vessels, TOF — tetralogy of Fallot, VSD — ventricular septal defect, TA — tricuspid atresia, TAVR — total anomalous pulmonary venous return.

<sup>2</sup> N — normal, ↓ — below 2 standard deviations.

<sup>3</sup> DDST — Denver Developmental Screening Test, P — pass, F — fail, GM — gross motor, FM — fine motor, Lang — language, PS — personal social.

<sup>4</sup> (+) — abnormal neurological signs present, (-) — normal neurological examination.

The height and weight data were plotted on the growth chart adapted from National Center for Health Statistics: NCHS Growth Charts, 1976.<sup>7</sup> The head circumference data were plotted on the head circumference charts adapted from Nellhaus.<sup>8</sup> Two standard deviations below the mean in height, weight, and head circumference is considered abnormal.

Results

Table I summarizes the pertinent clinical information regarding the subjects including age at ana-

tomical cardiovascular diagnosis, age at surgery, number of hospitalizations, and age at current study evaluation.

The average age at the time of this study was 38 mos (range 25-56 mos). The diagnosis of congenital heart disease was established by cardiac catheterization in 11 patients before the age of 3 mos, and in two others at 6 and 8 mos respectively. Seven patients were cyanotic, and six were acyanotic. Eight of the 13 patients had congestive heart failure (CHF) during infancy.

Eight of 11 patients had palliative or corrective

cardiac surgery during the first year of life. Four of these eight patients had second or third operations thereafter. The average number of hospitalizations was five (range 1-10) prior to this study evaluation. Two children had nine and ten hospitalizations prior to this study evaluation; the nine other patients had five hospitalizations or less.

### Developmental and Neurological Evaluation

The summary of the growth, developmental, and neurological evaluation is shown in *Table I*. Six of 13 had abnormal height and six had abnormal weight (two standard deviations below the mean). Eight of the thirteen had decreased head circumference (two standard deviations below the mean). Five children had abnormal growth in height, weight, and head circumference.

Four of 13 children (33%) had *fail* items in one or two areas in the DDST. *Fail* items for all four children are in the area of gross motor abilities, and one each had an additional *fail* item in fine motor, language, and personal-social areas. None had across-the-board delays in all four areas of the DDST.

Nine of the 13 patients (69%) had abnormal neurological findings, which included increased muscle tone, hyperreflexia, ankle clonus, articulation defects, and poor coordination. Seven of these nine children had two or more abnormal neurological signs.

### Analysis of Data

To compare the characteristics of the subjects who had *fail* items on the DDST with those who passed, the subjects were divided into two groups. *Table II* shows the characteristics of each group including: number of subjects having abnormal growth in weight, height, head circumference (two standard deviations below the mean); number of subjects with abnormal neurological signs; number of subjects who had CHF in infancy; mean PO<sub>2</sub> at the time of the first cardiac catheterization; presence of CHF or cyanosis at the time of this study; and number of hospitalizations.

The Fisher's exact probability was done on the frequencies and the Wilcoxon Rank Sum was done on the means to determine statistical significance. P-values below .10 are reported because of the small number of subjects. As can be seen in *Table II*, the characteristics with P-values under .10 are for weight, height, and head circumference.

The mean PO<sub>2</sub> of subjects who had *fail* items on the DDST was much lower (40.3 Torr) than that of subjects who passed (65.7 Torr). This difference was, however, not statistically significant because of the small number of samples.

To compare the characteristics of the subjects with abnormal neurological signs and those without, the subjects were divided into two groups. *Table III* shows the characteristics of each group as before except for the itemization of the number with *fail* items on the DDST.

TABLE II  
SUBJECT CHARACTERISTICS ACCORDING TO  
PERFORMANCE ON DENVER DEVELOPMENTAL  
SCREENING TEST

	<i>Fail</i> (4)	<i>Pass</i> (9)	<i>P-value</i> *
Wt. ↓ 2SD	4	2	.021
Ht. ↓ 2SD	4	2	.098
HCM ↓ 2SD	4	4	.098
Abnormal neurological signs	4	5	NS
Presence of CHF in infancy	2	6	NS
Mean and range of PO <sub>2</sub> at time of first cardiac catheterization	40.3 (26-72)	65.7 (36-101)	NS
Presence of CHF at time of study	1	1	NS
Presence of cyanosis at the time of study	2	1	NS
Number of hospitalizations	5	5	NS

\* According to Fisher's exact probability (frequencies) or Wilcoxon Rank Sum (means).

TABLE III  
SUBJECT CHARACTERISTICS ACCORDING TO  
NEUROLOGICAL EXAMINATION

	<i>Abnormal</i>	<i>Normal</i>	<i>P-value</i> *
Wt. ↓ 2SD	5	1	NS
Ht. ↓ 2SD	5	1	NS
HCM ↓ 2SD	5	3	NS
Fails on DDST	4	0	NS
Presence of CHF in infancy	5	3	NS
Mean and range of PO <sub>2</sub> at time of first cardiac catheterization	42.7 (26-72)	92 (84-101)	p<.01
Presence of CHF at time of study	2	0	NS
Presence of cyanosis at time of study	3	0	NS
Number of hospitalizations	5.1	4.3	NS

\* According to Fisher's exact probability (frequencies) or Wilcoxon Rank Sum (means).



The same procedures were done to determine statistical significance.

As can be seen, the only characteristic with significance was the  $PO_2$  at the time of the first cardiac catheterization.

## Discussion

The significant results of our study indicate that early developmental delay most frequently affecting gross motor performance occurs in some children with severe congenital heart disease. The causes of growth retardation in children with critical heart disease are multiple and not well understood. Hypoxemia, congestive heart failure, malnutrition,<sup>9</sup> hypermetabolism,<sup>10</sup> intrauterine growth factors,<sup>11</sup> and emotional disturbances<sup>12</sup> have all been implicated in the mechanism of delayed growth and development. In particular the role of hypoxemia as a primary cause of growth retardation is poorly understood. Some studies have shown significant difference in growth between cyanotic and acyanotic children with CHD<sup>4, 13, 14</sup> while others have not.<sup>1, 15</sup> With respect to developmental delay, the role of hypoxemia is also uncertain. In our study the lowest arterial  $PO_2$  was found in three patients who failed the DDST. It is tempting to speculate that reduced arterial oxygen tension played a role in the developmental delay; however, because of the small sample size no firm conclusion can be drawn. Silbert has also shown that cyanotic children have reduced gross motor performance.<sup>16</sup> In all tests involving large muscle movements, the cyanotic children scored lower than the non-cyanotic ones irrespective of the presence of congestive failure. Our results are in concurrence with this observation. Silbert studied older children (4-8 yrs), and it is not known whether the abnormal delay in gross motor performance was evident before the age of 4 yrs. It would be of interest to follow our patients for a longer period of time to determine if the observed developmental delay will persist.

In our study there was also a correlation between abnormal neurological signs and decreased arterial oxygen tension at the time of catheterization. The role of hypoxemia with respect to abnormal neurological findings is also unknown. In controlled laboratory experiments it has been shown that immature CNS is more resistant to the effects of acute hypoxemia than the mature brain.<sup>17</sup> Also, the effects of chronic hypoxemia on the developing nervous system are not well understood. Naeye has shown that in children with CHD and alimentary malnutrition, the brain weights were almost 30 per cent

below control.<sup>9</sup> The abnormal neurological findings in our study were localized and did not affect generalized brain function as indicated by selective effect on developmental skill primarily in gross motor performance and not involving across the board delays. Since the rapid brain growth occurring during the first year of life may be adversely affected by the presence of the CHD, it would be important to study longitudinally children with these kinds of malformations, particularly to determine whether corrective surgery would have a beneficial effect.

Despite its limitations, the DDST can be used effectively, rapidly, and economically by most physicians and nurse clinicians in evaluating development of children under the age of 6 yrs. There is currently much emphasis on early diagnosis and intervention in all forms of developmental disabilities in infancy and early childhood. From experience of the past few years, it appears that infant stimulation programs are beneficial in providing maximum environmental stimulation to help these children to develop to their full potential.<sup>18, 19</sup> These early stimulation programs enable parents to interact more effectively with their infants. It is known that most parents whose infants are affected by life-threatening cardiac anomalies are often in a chronic state of anxiety and fearful of losing their child.<sup>20</sup> They tend, therefore, to reduce their interaction, overprotect them, and expect much less developmental progress.

As more infants with serious congenital heart disease undergo corrective or palliative surgery early in life, the long-range goal for treatment and management must include improvement of the quality of life. The perceptual, cognitive, language, and motor performance must be part of the early clinical evaluation so that appropriate intervention may be carried out in a timely manner.

## References

1. Feldt, R. H.; Strickler, G. B. and Weidman, W. H.: Growth in children with congenital heart disease. *Am. J. Dis. Child.* 117:573, 1969.
2. Linde, L. M.; Rasof, B. and Dunn, O. J.: Longitudinal studies of intellectual and behavioral development in children with congenital heart disease. *Acta Paediatr. Scand.* 59:169, 1970.
3. Bayer, L. M. and Robinson, S. J.: Growth history of children with congenital heart defects. *Am. J. Dis. Child.* 117:564, 1969.
4. Mehrizi, A. and Drash, A.: Growth disturbance in congenital heart disease. *J. Pediatr.* 61:418, 1962.
5. Ehlers, K. H.: Growth failure in association with congenital heart disease. *Pediatr. Ann.* 7:750, 1978.
6. Frankenburg, W. K. and Dodds, J. B.: The Denver Developmental Screening Test. *J. Pediatr.* 71:181, 1967.

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# Ovarian Tumors

## Management of Cases in Young Patients

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CANCER takes the life of approximately one of 900 children before age 15 yrs. In this age group, leukemia is the most prevalent malignancy, followed in order of frequency by tumors of the brain and other parts of the nervous system, lymphomas, and tumors of the kidney and bone.<sup>1</sup> Malignant tumors of the female genital tract account for 3 percent of all malignancies in childhood and adolescence. Of these, two-thirds are of ovarian origin.<sup>2</sup>

When considering all ovarian masses in children and adolescents, the majority are true neoplasias, benign or malignant, the remainder being nonneoplastic cysts. A recent review of 613 cases of ovarian masses in children reported in the literature revealed 64 per cent were neoplastic and 36 per cent were physiologic cysts.<sup>3</sup>

### Nonneoplastic Cysts

Nonneoplastic cysts are common in early life. They have been reported in the newborn<sup>4</sup> and grossly visible follicle cysts have been observed in more than 50 per cent of 171 autopsies performed on infants and children.<sup>3</sup> Abnormality in gonadotropin secretion, normal ovarian response to normal gonadotropin levels,<sup>5</sup> imbalance of pituitary-ovarian physiology, and maternal levels of gonadotropins have been postulated in the pathophysiology of nonneoplastic ovarian cysts in the newborn and children.

Of all nonneoplastic cysts, about one-half are follicle cysts.<sup>4, 6</sup> The remainder include simple cysts, theca-lutein cysts (in the newborn), corpus luteal cysts, and paraovarian cysts<sup>3</sup> (Table I). In the newborn the majority are large follicle or theca-lutein cysts, and a preoperative diagnosis of ovarian cyst is seldom made.<sup>5</sup>

The average size of nonneoplastic cysts observed in 12 patients before age 15 yrs reported by Thompson *et al.*<sup>6</sup> was 9 cm, ranging from 5-25 cm in diameter. Pain was the most common presenting complaint, and a mass was palpable in one-half of the patients.

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### Neoplastic Masses

Among neoplastic ovarian masses, both benign and malignant, germ cell tumors are most frequent. In a review of ovarian tumors in 648 children reported in the literature,<sup>3</sup> approximately 60 per cent were germ cell tumors. The remainder included sex

**Approximately 2 per cent of all malignant tumors of childhood and adolescence are of ovarian origin. Details of diagnosis and aspects of pre-, intra-, and postoperative procedures are discussed.**

cord stromal tumors in 20 per cent, epithelial tumors in 15 per cent, and other tumors in 5 per cent. When age related trends were evaluated, epithelial tumors were more common than sex cord stromal tumors after age 10 yrs (Table II).

### Diagnosis

Diagnosis is easily made when physical findings are suggestive of ovarian tumor. Palpation of normal ovaries in children is not possible in most instances, since they are essentially an abdominal organ.<sup>7</sup> This is easily understood if one remembers that their embryologic origin is from the level of T10-T12. Therefore, palpation of enlarged ovaries is abnormal in the child;<sup>7</sup> most ovarian tumors present as abdominal masses.<sup>3</sup> The degree of ovarian enlargement will dictate whether they can be palpated abdominally or by recto-abdominal examination. At puberty the ovaries descend into the true pelvis,

TABLE I  
NONNEOPLASTIC CYSTS IN CHILDREN

Follicle cysts (50%)
Simple cysts
Theca-lutein (newborn)
Corpus luteal
Paraovarian



TABLE II  
OVARIAN TUMORS IN CHILDREN

Frequency	0-9 Yrs.	10-17 Yrs.	0-17 Yrs. (%)
1	Germ cell	Germ cell	Germ cell (60)
2	Sex cord stromal	Epithelial	Sex cord stromal (20)
3	Epithelial	Sex cord stromal	Epithelial (15)
4	Other	Other	Other (5)

Adapted from Green and Maxson.<sup>3</sup>

becoming palpable rectally or by recto/vaginal examination. However, it is not uncommon for freely mobile ovarian tumors measuring 20 cm or more not to be palpated on recto-vaginal examination. In these instances, the tumor is lying above the true pelvis and can only be palpated abdominally. We have recently encountered two young patients with giant ovarian cysts not palpable on pelvic examination.

Abdominal pain is the most common presenting symptom. Usually it is periumbilical in location. Acute pain is present in instances of torsion. Torsion is commonly due to an elongated ovarian ligament and abdominal position of the ovaries.<sup>3</sup> Subacute or chronic pain is usually related to stretching of the abdominal peritoneum and compression of abdominal and pelvic organs.<sup>7</sup> In the latter situation, constipation, tenesmus, and urinary frequency are common symptoms. Isosexual precocious pseudopuberty may occur in association with granulosa-theca cell tumors and choriocarcinoma of germ cell origin. Giant ovarian cysts may be difficult to differentiate from ascites on abdominal examination.

Acute appendicitis is the most common diagnostic error.<sup>3</sup> In a recent review of the literature, Breen and Maxson<sup>3</sup> observed that a correct preoperative diagnosis was established in only 36-63 per cent of instances.

Preoperative Management

Preoperative management of children and adolescents with ovarian tumors varies depending on the clinical presentation. As a rule, surgical exploration is indicated with exception of: (1) ovarian cysts in newborns without significant abdominal enlargement, where a two-week observation period is permissible;<sup>8</sup> or (2) unilateral asymptomatic, non-calcified ovarian cyst in a postpubertal girl, since a functional ovarian cyst is a possibility. Pituitary suppression with oral contraceptives for a period of six

weeks is advisable. This therapy will achieve regression of all functional ovarian cysts.<sup>9</sup>

Preoperative management is dependent on several factors. *Age of patient:* Ovarian cysts in the newborn may be observed for a period of two weeks. *Size of tumor:* Large ovarian functional cysts are unlikely to regress; ovarian masses of moderate size are likely to undergo torsion. *Symptomatology:* Acute abdominal pain, nausea, and vomiting may require emergency surgical exploration; isosexual precocious pseudopuberty is secondary to an ovarian estrogen-producing tumor in only 2-5 per cent of the patients.<sup>3, 10</sup> *Calcifications:* Mature cystic teratomas in childhood demonstrate calcifications in more than 50 per cent of cases.<sup>3</sup> *Findings on pelvic examination:* Examination is performed with attention to: size, fixation, presence of nodularities on the surface of the tumor, consistency (solid, cystic, or a combination of both), bilaterality and associated pelvic findings including uterus, cervix, vagina, vulva, rectum, and urethra.

Intraoperative Management

The physician performing surgery for an ovarian mass in a child or adolescent must be knowledgeable in the management of germ cell tumors, since these are frequently encountered in these patients. A decision toward conservative or definitive surgery is encountered when the tumor is malignant. A decision based on diagnosis by frozen section may be erroneous unless a competent pathologist versatile in frozen section examinations is available. Alternative option is conservative surgery and diagnosis by permanent sections. A second surgical procedure may be necessary in this situation and the patient and relatives should be aware of it.

Whenever ovarian malignancy is suspected a mid-line incision is mandatory. In case of doubt, a mid-line incision is preferable. Exposure of the upper abdomen is not possible through a low transverse

incision, and this is the area at risk for subclinical metastases in Stage I and II ovarian malignancies.<sup>11</sup> In addition, staging of ovarian malignancies is surgical, and this includes inspection and sampling of the upper abdomen and retroperitoneal nodes.

### Conservative Surgery

Removal of a nonneoplastic cyst with preservation of the ovary is advisable since the possibility of recurrence does not exist. This is also applicable in dealing with benign, mature cystic teratomas. Preservation of the ipsilateral fallopian tube is usually possible in cases of para-ovarian cysts. This requires careful dissection and prolongation of surgery. Following negative abdominal surgical staging, unilateral salpingo-oophorectomy is adequate initial therapy if preservation of fertility is a consideration in patients with Stage IA: Immature teratoma, dysgerminoma up to 10 cm in diameter, endodermal sinus tumor, choriocarcinoma, granulosa-theca cell tumor, thecoma, androblastoma, and grade one mucinous adenocarcinoma. Bilateral oophorectomy is indicated in patients with gonadoblastoma, since it is usually found in dysgenetic gonads.

### Definitive Surgery

Total abdominal hysterectomy, bilateral salpingo-oophorectomy and resection of remaining tumoral masses, without compromising the patient's condition, is recommended with more advanced ovarian malignancies.

Adherence to strict surgical rules is not advisable when individualization of therapy will provide better results.

### Postoperative Management

Postoperative therapy in the form of radiation or chemotherapy is necessary when definitive surgery has been performed for an advanced ovarian malignancy. Postoperative chemotherapy is indicated following unilateral salpingo-oophorectomy for immature teratoma, endodermal sinus tumor, and choriocarcinoma. Postoperative therapy in patients with gonadoblastoma is based on the type of the germ component present. Regular long-term followup of these patients is mandatory to detect early and late recurrences.

### References

1. *Cancer Rates and Risks*. U.S. Department of Health, Education and Welfare, 1959.
2. Smith, J. P.; Rutledge, F. N. and Sutow, W.: Malignant gynecologic tumors in children: Current approaches to treatment. *Am. J. Obstet. Gynecol.* 116:261, 1973.

3. Breen, J. L. and Maxson, W. S.: Ovarian tumors in children and adolescents. *Clin. Obstet. Gynecol.* 20:607, 1977.
4. Ahmed, S.: Neonatal and childhood ovarian cysts. *J. Pediatr. Surg.* 6:702, 1971.
5. Jones, H. W. Jr. and Heller, R. H.: *Pediatric and Adolescent Gynecology*, Baltimore, Williams & Wilkins, pp. 143, 1966.
6. Thompson, J. P.; Dockerty, M. B.; Symmonds, R. E. and Hayles, A. B.: Ovarian and paraovarian tumors in infants and children. *Am. J. Obstet. Gynecol.* 97:1059, 1967.
7. Barber, H. R. K. and Graber, E. A.: Gynecological tumors in childhood and adolescence. *Obstet. Gynecol. Surv.* 28:357, 1973.
8. Barber, H. R. K.: Diagnosing and managing the unilateral mass. *Contemp. Obstet. Gynecol.* 7:99, 1976.
9. Spanos, W. J.: Preoperative hormonal therapy of cystic adnexal masses. *Am. J. Obstet. Gynecol.* 116:551, 1973.
10. Speroff, L.; Glass, R. H. and Kase, N. G.: *Clinical Gynecologic Endocrinology and Infertility*. Baltimore, Williams & Wilkins, pp. 140, 1973.
11. Piver, M. S.; Barlow, J. J. and Lele, S. B.: Incidence of subclinical metastasis in Stage I and II ovarian carcinoma. *Obstet. Gynecol.* 52:100, 1978.

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### Malignant Melanoma

(Continued from page 112)

ardless of the patient's age. Prognosis is dependent upon stage and level and should be included in the pathology report. With early diagnosis and adequate treatment the five-year survival rate should be greater than 50 per cent.

### References

1. Morrow, C. P. and Disaia, P. J.: Malignant melanoma of the female genitalia: A clinical analysis. *Obstet. Gynecol. Surv.* 31:233, 1976.
2. *Manual of Staging Cancer*, 1978. American Joint Committee, p. 131.
3. Clark, W. H. *et al.*: The developmental biology of primary human malignant melanomas. *Semin. Oncol.* 2:83-103, 1975.
4. Mihn, M. C., Jr. and Clark, W. H.: Current concepts: The clinical diagnosis, classification and histogenetic concepts of the early stages of cutaneous malignant melanoma. *N. Engl. J. Med.* 284 (Suppl):1078-1082, 1971.
5. Chung, A. F.; Woodruff, J. M. and Lewis, J. L.: Malignant melanoma of the vulva. *Obstet. Gynecol.* 45:638, 1975.



# Tricyclic Antidepressants

## *Clinical Use of Plasma Levels*

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DEPRESSION is one of the major health problems in this country. More than 400,000 Americans are treated annually for depression — most as outpatients and most by nonpsychiatric physicians. It has been estimated that 5-10 per cent of the population will suffer from depression at least once during their lifetime. Suicide — an all too common sequelae of depression — is the tenth most common cause of death in the United States and accounts for at least 26,000 and perhaps as many as 75,000 deaths annually.

Significantly, the majority of depressed patients can be helped by chemotherapy. Since their introduction in 1956, tricyclic antidepressants have become the treatment of choice with amitriptyline (Elavil, Endep) and imipramine (Tofranil) being the most widely used. Yet, one-third of patients who could improve with chemotherapy will not respond to routine dosages. There are two main reasons for such treatment failures: (1) noncompliance, and (2) inappropriate drug concentrations. Recent developments in plasma drug monitoring can eliminate these problems. The usefulness of such monitoring in daily practice will be discussed in this paper.

A 36-fold difference in elimination rates for tricyclic antidepressants exist among normal individuals.<sup>1</sup> Added to this genetically determined metabolic phenomenon, other factors contribute to the high concentration variability among patients including: (1) demographic variables such as age, sex, and race; (2) disease states such as malabsorption, impaired renal function, and liver disease; (3) drug interactions; and (4) abnormal protein binding of the drug. Together these factors seriously impair the clinician's ability to titrate the dosage to achieve a therapeutic drug concentration. Given standard dosages, some patients will achieve barely detectable levels; others, therapeutic concentrations; and a few, seriously toxic amounts. However, correlations do

exist between tricyclic antidepressant plasma levels and both beneficial and adverse drug effects. By monitoring such levels, dosages can be rationally adjusted to improve treatment response and reduce the risk of inadvertent toxicity.

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**Patients receiving tricyclic antidepressants can achieve steady-state concentrations that vary as much as 30-40 fold due to genetically determined differences in metabolism. With routine dosages, rapid metabolizers will develop suboptimal concentrations while slow metabolizers can become toxic due to inappropriately high concentrations. Recent advances in chromatography permit analysis of plasma levels of these drugs. Physicians can use such plasma determinations to improve clinical response while reducing the risk of serious adverse effects.**

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Thus, there are four reasons for monitoring tricyclic antidepressant plasma concentrations: (1) to check compliance with drug treatment; (2) to adjust dosage to achieve therapeutic drug concentrations; (3) to guard against inadvertent toxicity; and (4) to document the seriousness of an overdose attempt.

### **Checking compliance**

In a study of medical and psychiatric outpatients, 70 per cent of patients on a four-dose/day regimen failed to take from 25-50 per cent of the prescribed dose.<sup>2</sup> Such noncompliance can be uncovered by plasma monitoring. A low plasma concentration would encourage the physician to determine whether the patient is following the prescription orders. If questioning does not resolve the issue, the physician can test for compliance by increasing the dosage and rechecking the plasma concentration one week later. If the drug level is not increased, the patient is not complying. Patients not ingesting medications as prescribed are more likely to comply if plasma checks can be made.

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## Adjusting dosage

Tricyclic antidepressant plasma monitoring is useful if employed routinely on patients undergoing tricyclic antidepressant therapy, because the number of responders can be increased by giving a larger dose to patients with plasma concentrations below the appropriate range and a smaller dose to patients beyond this range. If monitored routinely in patients undergoing tricyclic antidepressant therapy, the duration of depression can thus be decreased. The following is a brief summary of the relationship between clinical response and plasma levels of nortriptyline and amitriptyline.

*Nortriptyline* has been the first and the most extensively investigated tricyclic antidepressant. Asberg and associates<sup>3</sup> originally described a "therapeutic window" in which optimal antidepressant effect was seen only in patients with plasma levels above 50ng/ml and below 175ng/ml. Other studies have reported similar U-shaped relationships between plasma levels of nortriptyline and therapeutic effect, with amelioration of symptoms most pronounced in this plasma concentration range.<sup>4, 5</sup>

With *amitriptyline*, adequate assessment of the relationship between clinical response and drug plasma levels requires measurement of the total tricyclic antidepressant plasma levels of both amitriptyline and its active metabolite, nortriptyline. Several authors have found significant positive linear relationships.<sup>6, 7</sup> As with nortriptyline, some investigators have reported a curvilinear "therapeutic window" between total tricyclic antidepressant plasma concentration and clinical improvement in depression. A good clinical response is infrequent if the combined (amitriptyline plus nortriptyline) steady-state plasma concentration is less than 150ng/ml. Whereas maximum improvement occurs at plasma levels between 150-250ng/ml, concentrations above 250ng/ml are associated with toxic side-effects without additional clinical improvement. Of the other tricyclic antidepressants, only imipramine has been adequately studied. For this drug, there is also a positive correlation between its plasma level and relief of depression.<sup>8</sup>

Plasma samples should be obtained after the patient has been on a stable dosage for a minimum of one week. This stipulation will insure that the patient is at a steady equilibrium condition, *i.e.* the concentration of drug will not change despite continued drug administration.

Three outcomes may occur with such monitoring. First, the concentration may be inappropriate — either too low or too high — for optimal response so

that the dosage must be adjusted. Second, the concentration may be appropriate but response still sub-optimal. The physician will know that the patient has had an adequate exposure to that particular antidepressant and that a trial with another class of antidepressant is indicated. Third, a low concentration associated with a good response suggests a placebo response so that the physician may elect to discontinue medication and initiate other treatment modalities such as psychotherapy.

## Preventing Toxicity

Some patients inadvertently experience toxicity while taking routine doses. Such inadvertent toxicity can be life-threatening and occurs because of marked interindividual variations in metabolic clearance rates for tricyclic antidepressants. This toxicity principally affects the central nervous system and cardiovascular system. Such toxicity occurs at excessively high drug concentrations. The neurotoxicity presents as a delirious state with confusion, memory impairment, hallucinations, and cerebellar signs.

Tricyclic antidepressants can exert marked action on the cardiovascular system, even when typically therapeutic doses are being taken.<sup>9</sup> Cardiac patients and elderly patients are particularly at risk, presumably because of slower metabolism and increased sensitivity to the cardiac effects of the drugs. These adverse cardiovascular effects include postural hypotension, sinus or supraventricular tachycardia, atrial fibrillation, intraventricular conduction defects, ventricular tachycardia, high output failure, and sudden death. Common abnormalities revealed by EKG include: T-wave changes, ST-segment variations, and prolongation of the Q-T and P-R intervals.<sup>10</sup>

These EKG changes are concentration-related.<sup>10</sup> Nortriptyline produces intraventricular conduction delays at plasma concentrations above its therapeutic range.<sup>11</sup> However, conduction disturbances in healthy young and middle-aged patients at therapeutic plasma levels of nortriptyline are rare suggesting that keeping plasma levels of nortriptyline within the therapeutic range will reduce inadvertent cardiotoxicity.<sup>12</sup> In therapeutic dosages, amitriptyline raises the heart rate, with higher plasma levels correlating with higher mean rate increase.<sup>13</sup> Imipramine and desipramine can impair cardiac conduction — even at therapeutic plasma levels — in depressed patients with pre-existing heart disease.<sup>14</sup>

Tricyclic antidepressant plasma levels are therefore an important clinical measure enabling the physician to adjust the dosage to avoid iatrogenic



drug toxicity. Without tricyclic antidepressant plasma levels, the physician has no predictive means of knowing whether a patient receiving moderate amounts of tricyclic antidepressant will develop toxic concentrations.

### Assessing Overdosage

Tricyclic antidepressants are extremely dangerous drugs when taken in overdose amounts and often represent a serious medical emergency. Accidental overdoses occur most commonly in children. Deliberate overdoses are common in suicide attempts. Major symptoms include coma with cardiovascular shock and sometimes metabolic acidosis; respiratory depression with a tendency to sudden apnea; agitation and delirium; neuromuscular irritability and seizures; hyperpyrexia; bowel and bladder paralysis; and a variety of cardiac manifestations including conduction defects and arrhythmias.

Cardiac problems constitute the principal problem of such overdoses. Spiker *et al.* showed a strong correlation between plasma level and duration of QRS interval in patients overdosed on tricyclic antidepressants.<sup>15</sup> All patients with a total plasma tricyclic antidepressant concentration of 1000ng/ml had a prolonged QRS interval of 100msec or more. As the plasma tricyclic antidepressant level falls, the QRS duration returns to normal. Petit *et al.* later showed that death, need for respiratory support, unconsciousness, seizures, cardiac arrhythmias, and bundle branch block were more common in patients with a total tricyclic antidepressant concentration exceeding 1000ng/ml.<sup>16</sup> Although a total tricyclic antidepressant plasma concentration exceeding 1000ng/ml is toxic in all patients, cardiac arrhythmias and death have occurred at plasma concentrations as low as 500ng/ml.<sup>17</sup> Thus, documentation of a serious drug overdose by plasma monitoring may be advisable from a medicolegal standpoint.

### Assay Methodology

Many techniques have been used to assay tricyclic antidepressant levels. However, very few laboratories offer specific, well-validated determinations. The psychopharmacology laboratory at the University of Kansas has developed a high performance liquid chromatography (HPLC) with a modified ion-pair partition chromatography procedure. This assay has proved to be highly sensitive and reliable for measuring plasma levels of amitriptyline and its metabolites, as well as other commercially available tricyclic antidepressants.<sup>18</sup>

Methods of blood collection are important. Plas-

ma samples should be obtained after the patient has achieved a steady-state concentration which takes a minimum of 5-7 days on a stable dosage. The sample should be obtained 8-12 hours following the last dose. Such timing usually means drawing the sample in the morning. Drawing a sample too soon or too late tends to give either falsely high or low values respectively.

Several other handling factors can adversely affect the reliability of the plasma determination. Ideally, the samples should be drawn completely in glass because some rubber stoppers used in vacuum tubes tend to absorb the drug, thus artificially lowering the plasma level.<sup>19</sup> However, this binding requires continuous contact of the blood with the stopper for more than 30 minutes to have any appreciable effect. Therefore, vacutainer tubes can be used if care is exercised to avoid prolonged contact of the sample with the stopper. To reduce this problem of drug binding to the stopper, tubes should be stored upright in the refrigerator if there is to be a delay between drawing the sample and centrifuging it to separate the plasma.

Either green stoppered or dark blue stoppered heparinized tubes should be used. Hemolysis of the sample must be avoided since it artificially elevates the plasma level by liberating drug bound to the red blood cell (RBC). To reduce this problem, the plasma should be separated from RBC by centrifugation at 2000 rpm for ten minutes. The plasma can then be transferred to a glass or inert plastic tube. The plasma level of the drug will then be stable for several weeks when stored at -20C.<sup>20</sup> If the tubes are to be mailed, they should be sealed with a teflon or tin lined cap. Also, they should be packed in such a way as to avoid exposure to heat or sunlight, either of which can initiate chemical degradation of the drug. In general, patients should be on only a single tricyclic antidepressant when a plasma determination is done. Moreover, concurrent use of other tricyclic compounds like phenothiazines and thioxanthenes should be avoided as they may interfere with assay procedures. If the physician needs to measure tricyclic antidepressant plasma concentrations in a patient receiving both a tricyclic antidepressant and a neuroleptic drug, the latter should be withheld for several days before the sample is obtained to reduce the chance of interference.

### References

1. Bennett, J. F.: *Antidepressant Drugs* (Carattini, S. and Duke, M. N. G., eds.). Amsterdam, Excerpta Medica International Congress Series No. 122, pp. 375-393, 1967.

(Continued on page 134)

# School Phobia

## Interventions in Childhood Cancer

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CHILDREN with cancer increasingly are becoming long-term survivors; therefore it becomes imperative that their life-styles be as close to normal as possible. As for all children, a critical psychosocial goal for a child with cancer becomes regular school attendance and a post-diagnosis achievement level that approximates the pre-illness achievement level. Whether the child's malignant disease is under control or recurrent, he/she should be in the classroom whenever possible (*Table I*).

In the general school-age population, the incidence of school phobia is approximately 1 per cent. In a 1975 study of a large sample of school-age cancer patients at the University of Kansas School of Medicine (UKSM), we found a greater than 10 per cent incidence of classical school phobia.<sup>1</sup> The hallmarks of school phobia include refusal to attend school, fear of separation from the mother, and somatic complaints. Even in children who are not school phobic, absenteeism is a significant problem. In a later study we found that 67 per cent of our population as well as a comparison population at another cancer center were missing more than four weeks of school per year with no demonstrable reason for being absent. This number of absences is not conducive to academic progress (*Table II*).

The general problems that tend to alter the life-

**Children with cancer need to be maintained in as near normal environment as possible. This program, developed at UKSM, is designed to assist in maintaining such environment for the child able to attend school.**

styles of these children and their families include increased marital conflicts and emotional upsets, feelings of isolation or rejection in siblings, and isolation of the family from friends and relatives.<sup>2</sup> Specific problems affecting life-style for the patient include various side effects of treatment, such as hair loss, weight gain from prednisone, nausea, bone pains, and low blood counts. All of these problems can contribute to the child withdrawing and developing school phobia (*Table III*).

Parents often have a tendency to ignore these problems and, in fact, may encourage them because of their own fears about separation. It may require some specific, direct questioning by the doctor to elicit this. Evasive answers such as "everything is fine" and "he's doing okay" or hostility by the family in replying to inquiries about school attendance are suggestive of school phobia. If the child has somatic complaints of abdominal pain, headache or gastrointestinal upset, they may or may not be due to medications. A visit to the physician would usually resolve that issue. If these complaints disappear

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TABLE I  
IMPORTANCE OF SCHOOL ATTENDANCE

1. Provides social contact
2. Boosts morale
3. Counters boredom
4. Maintains dignity
5. Normalizes life

TABLE II  
MEDICAL FACTORS PLACING CHILDREN AT RISK  
FOR SCHOOL PROBLEMS

1. Complexity of treatment regimen
2. Routine follow-up (clinic, etc.)
3. Disease status
4. Neutropenia
5. Infection
6. Chicken pox in the classroom



TABLE III	
PSYCHOSOCIAL FACTORS PLACING CHILDREN AT RISK FOR SCHOOL PROBLEMS	
1.	Depression
2.	Change in appearance
3.	Fear of separation (child and parents)
4.	Resistance on part of school personnel

when school is out, there is further confirmation of the phobic nature of the complaints.

Part of the problem of poor school attendance may be rooted in general difficulties with discipline and control. Many parents have tremendous guilt feelings because they feel that they either did something or failed to do something that brought about this catastrophic illness. As a consequence, they have difficulty in exercising discipline and maintaining adequate control of the child. If the child is reluctant to go to school, the parents are not firm in their demands because of their guilt feelings. The physician should work with the family from the beginning to convince them that they had no role in the acquisition of the disease by their child and to stress the importance of maintaining normal discipline in all situations.

Preparing the school personnel and the patient's classmates for the return of a child with a serious illness must be addressed in a prophylactic manner. The issues include encouraging teachers to have realistic expectations and to avoid an overprotective attitude toward the child. Educating them to handle open classroom discussion of the illness also is appropriate.<sup>3</sup> Unfortunately some schools have encouraged the isolation of the child with cancer by too quickly arranging a homebound program or arbitrarily limiting participation when regular school attendance is medically feasible and advisable. To emphasize the importance of maintaining school progress, we maintain a classroom and a full time school teacher here at the hospital to instruct children while they are in-patients. When the child is ready to be discharged, it is easy to emphasize the importance of continued attendance in school.

**Return to the Classroom**

For the child newly diagnosed with cancer, the return to school can create a traumatic situation for the child himself, his family, teachers, and classmates. The sick child fears rejection by his peers because of a change in appearance — usually weight gain/loss and hair loss. He also worries that he may

not be able to keep up with his classmates as he once did in day-to-day activities.

The child's parents have difficulty in separating themselves from the child. They are concerned that some unforeseeable harm may come to the child if he leaves the home. They are told by medical center personnel that the child will be immunosuppressed because of his cancer therapy and this will render him vulnerable to serious and perhaps even fatal infection. These parents come to realize that something as ordinary as chicken pox can cause unusually severe complications in their child and can even result in death, regardless of the status of the child's cancer. Yet, they also are encouraged by these same medical center personnel to resume a normal way of life and, for the child, this includes regular school attendance. Hence, clear medical criteria for attendance should be defined; this will be helpful to school personnel, as well as to the patient and family.

Most school personnel (principals, teachers, school nurses) have had some experience with cancer in an adult friend or family member. However, few of them have known a child with cancer. Naturally, they tend to compare the adult and child cancer patient, and this is not a valid comparison. Children with cancer tolerate therapy generally much better than do adults and their overall long-term survival statistics also are more encouraging.

School personnel usually fear that the child will have some dramatic episode, such as massive hemorrhage, during school and die on the spot. This comes usually from their lack of knowledge about cancer in children and its therapy. In an ongoing study involving more than 100 school-age children with cancer at UKSM, the teachers, principals, and school nurses of these children were asked to complete a short questionnaire which was designed to assess their knowledge and attitudes about cancer in children. Results of this survey showed that most of the respondents were familiar with the name of the child's disease but did not recognize all treatment modalities (such as surgery and radiation) or possible side effects of treatment. A question also was asked about the child's anticipated prognosis. Alarminglly, in almost all cases, it was the school nurse who was most unrealistically pessimistic about the child's prognosis. This has consequences that need to be addressed early in the child's disease.

The school nurse is generally utilized as a resource by teachers, counselors, and other school personnel. If the school nurse feels that a child with a good prognosis, such as acute lymphocytic leukemia, does indeed have a disease that is inevitably fatal, the misinformation will be conveyed to the

child's teachers. Consequently, these teachers will put no demands on the child to keep up with his school attendance or achievement. Statements from teachers such as "now that he's sick, I accept whatever he gives me" are not uncommon. This type of attitude and treatment do a great disservice to a child with a good prognosis and normal life expectancy.

Essential then, to the child's continued academic progress, is education of those school personnel involved with him. This is especially true for the school nurse, who will serve as a resource person for the child's teachers, classmates, and family.<sup>4</sup>

It has been our experience that the education of school nurses should be both written and verbal. When a child is newly diagnosed, the school nurse is contacted by a nurse clinician in Pediatric Oncology at UKSM. The nurse clinician, the hospital teacher, and a team psychologist then participate in a routine school conference with school personnel including the school nurse, teachers, counselors, and principals. Background information is given about the child's specific disease, the treatment to be used, and the expected side effects of treatment. The school nurse is provided with concrete guidelines for management of fever, bleeding, low blood counts, and chicken pox exposure in the child with cancer. A realistic prognosis for the child is provided. School personnel always are encouraged to treat the child as normally as possible and to prepare him for a long future just as they do his classmates.

The team psychologist discusses some of the problems that may develop and suggests methods of handling them. The problem of teasing or rejection by classmates usually can be eliminated by educating them (with the permission of the child and the parents) so they understand that they have nothing to fear from contact with the patient. The importance of maintaining contact with the patient during any prolonged absences is emphasized. School personnel always are encouraged to contact the medical center team with any questions as they arise.

Shortly after this school conference, the school nurse is provided with a packet of written information which includes the following:

1. Written information (from a current source) about the nature and pathology of the child's disease.
2. A schema showing the frequency, type, and duration of therapy.
3. Specific information about each of the drugs that the child will receive, as well as their expected side effects.
4. A pamphlet titled "Cancer in the Classroom:

How Do You Cope? (A Teacher's Guide to Cancer in Children)" which gives an overall view of cancer, side effects, classroom management.<sup>5</sup>

5. An article that provides basic guidelines about measures to be used in case of fever, bleeding, low blood counts, chicken pox exposure, etc.<sup>6</sup>
6. A signed physician's statement explaining that the child may not receive immunizations while on chemotherapy.

Followup communication with the school nurse is provided on a regular basis at least once per semester and more often if needed. The school nurse is notified of any change in the child's disease status or therapy and what this change means in terms of the child's overall functioning and prognosis. If the child with cancer changes schools, the same procedure is carried out with the new school nurse.

We have found the described intervention program most useful in providing the school with accurate and realistic information about the student with cancer. Once armed with appropriate knowledge, the school nurse can assume a valuable role as resource person for the child, his teachers, classmates, and family.

## Conclusions

Since we have instituted the school intervention program we have seen an overall improvement in the school attendance of our children with cancer. We also have been able to identify children who are at high risk for school phobia and are able to begin early intervention activities with these children. We have developed the program of school intervention using cancer as a representative pediatric chronic disease. It can also serve as a model for school intervention for any pediatric patient with a chronic disease — such as cystic fibrosis or diabetes — for these are the children at high risk for developing school problems.

## References

1. Lansky, Shirley *et al.*: School phobia in children with malignant neoplasms. *Am. J. Dis. Child.* 129:42-46, 1975.
2. Lansky, Shirley and Cairns, Nancy: Cancer: The patient and the family. *Pediatric Surgery* (Holder and Ashcraft, eds.). Philadelphia, W. B. Saunders, pp. 923-931, 1980.
3. Greene, Patricia: The child with leukemia in the classroom. *Am. J. Nurs.* 75:86-87, 1975.
4. Moore, Ida and Triplett, June: Students with cancer: A school nursing perspective. *Cancer Nurs.* 3(4):265-270, 1980.
5. Klopovich, Patricia; Rosen, David; Cairns, Nancy and Moore, Rose: *Cancer in the Classroom: How Do You Cope?* (A Guide to Cancer in Children.) Mid-America Cancer Center Program, Kansas City, Kansas, 1979.
6. Klopovich, Patricia: Immunosuppression in the child who has cancer. *Am. J. Matern. Child Nurs.* 4(5), 1979.





## Current COMMENT

H. B. LINDSLEY, M.D., *Editor*

### *Interferons as Antitumor Agents*

SARAH TAYLOR, M.D., *Kansas City, Kansas*

INTERFERON (IFN) was described in 1957 by two virologists — Alick Isaacs and Jean Lindenmann — as a naturally-occurring substance capable of inhibiting virus replication.<sup>1</sup> Since then it has been shown to have antitumor and immunomodulating properties as well. Twenty years might seem sufficient time to establish a therapeutic role for such a potentially valuable agent. However, there have been numerous reasons for delay: difficulties in preparation of quantities large enough and pure enough for human use; its heterogeneity; and its species specificity. As such, clinical trials are in their infancy and many questions remain.

**Classification.** IFN is not a single agent. To be classified as an interferon, "a factor must be a protein which exerts virus nonspecific, antiviral activity at least in homologous cells through cellular metabolic processes involving synthesis of both RNA and protein."<sup>2</sup> IFNs are now classified in three types based on antigenic specificities: alpha ( $\alpha$ ), beta ( $\beta$ ), and gamma ( $\gamma$ ), replacing old classifications of leukocyte, fibroblast, and immune based on source (Table I). This was done as leukocyte IFN exists in both  $\alpha$  and  $\beta$  forms. IFN preparations containing more than one type are identified by the predominant one present. Subtypes within each group have recently been described.

**Purification.** Most clinical trials have been done with IFN from normal human leukocytes. These are separated from donated blood and the IFN extracted by the Finnish blood transfusion service using Cantell's method. Purity is assessed by specific antiviral activity. Theoretically, the activity of pure  $\alpha$  inter-

feron is  $2.5 \times 10^9$  units/mg protein. The Finnish material used for present testing contains  $4 \times 10^6$  units/mg protein (0.1%). Only recently, investigators have been able to produce IFNs with specific activities between 2 and  $10 \times 10^8$  units/mg protein.

One solution to the problems of production, purity, and excessive cost may be the new DNA recombinant technique using *Escherichia coli* for production. This technique has already been used to prepare small quantities of human insulin and has considerable promise.

Human trials with IFN inducers yield high levels of IFN; however, clinical results have been disappointing and the toxicity significant.

**Preclinical Studies.** IFNs inhibit many different tumors in animal systems; however, they have been most effective when the tumor load was small. Few studies show actual regression of established tumor. In most studies, the antitumor activity is prophylactic. It has been effective in reducing the incidence of spontaneous murine mammary tumors and leuke-

TABLE I  
NEW AND OLD NOMENCLATURE FOR  
HUMAN INTERFERONS (IFN)

New	Old
IFN- $\alpha$	Le (leukocyte), type I, pH 2 stable, foreign cell-induced
IFN- $\beta$	F (fibroblast), Fi, type I, pH 2 stable
IFN- $\gamma$	IIF (immune), type II, T, pH 2 labile, antigen-induced, mitogen-induced

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mias. Antitumor effects in animal systems have been seen at doses causing no side effects.

In vitro studies also have shown IFN inhibits the growth of both human and animal cell lines. The exact mechanism of action has not been established. Recent studies by G. B. Rossi and L. Coie using human K562 cancer cells were presented at the First International Congress on IFN. They showed that low doses increase cellular differentiation without inhibiting cell growth. High doses reduce cell growth by as much as 50 per cent. Determining an exact mechanism becomes even more complex considering the multitude of effects when an animal is inoculated with IFN: inhibition of lymphocyte sensitization and multiplication, enhancement of natural killer cell activity, the induction of prostaglandins, inhibition of delayed hypersensitivity, etc.

### Clinical Trials

*Osteosarcoma-Adjuvant.* The first trial of IFN in human malignancy began in 1971 at the Karolinska Hospital in Stockholm and is still in progress.<sup>3</sup> Patients with osteosarcoma receive  $\alpha$  IFN intramuscularly (IM) daily for one month. During that time, surgery is performed: exarticulation, amputation, or resection. After the first month, IFN is given three times/week for 17 mos. There is a concurrent control group receiving conventional surgical treatment; to date, 36 patients from all other Swedish hospitals have been enrolled. Life table analysis showed that 64 per cent of the 33 IFN-treated patients were free of disease at 2½ yrs compared to only 30 per cent in the control group. It is unfortunate that this study was not prospectively randomized and is therefore subject to reservations in interpretation.

*Breast Cancer.* E. C. Borden of the University of Wisconsin recently reported, at the First International Congress on IFN, the final results of a trial in metastatic breast cancer patients sponsored by the American Cancer Society. Twenty-six patients received  $3 \times 10^6$  units IM/day for 28 days. Patients with stable disease or better were continued on treatment with  $3 \times 10^6$  units or  $9 \times 10^6$  units IM/day for 14 days. Thereafter, responding patients were randomized to no therapy or maintenance therapy. All patients had recurrent measurable disease and a good performance status. Only one patient had received prior chemotherapy. The median age was 56 yrs with a range of 39-75 yrs. Six patients (23%) had partial remissions, defined as at least a 50 per cent reduction in disease, with no other disease progression. Five patients improved but had less than a partial response; eight remain stable.

M. D. Anderson Hospital and Tumor Institute in

Houston, Texas, has given IFN to 17 patients with advanced breast cancer. Patients received IFN daily for 30 days. Responding patients received a maintenance dose of  $3 \times 10^6$  units three times/wk. The median age was 55 yrs and all but one patient had received and failed prior chemotherapy, hormonal therapy, or both. Four of the 11 patients treated at  $3 \times 10^6$  units and two of six treated at  $9 \times 10^6$  units achieved a partial response, for a response rate of 34 per cent. Remissions have been maintained from 8-104 wks (median 27 wks). Responding patients usually had primary disease of the soft tissues and had had a response to prior therapy.<sup>4</sup>

*Non-Small Cell Carcinoma of the Lung.* Memorial Sloan-Kettering Cancer Center, New York, New York, recently completed their trial in non-small cell carcinoma of the lung. The majority of these patients had adenocarcinomas. The median age was 49.5 yrs. These patients were ambulatory and able to carry out light work. Of 16 patients, only one had received no prior treatment; one had received prior radiotherapy; and 14 had received chemotherapy, radiotherapy, or both. No objective responses were seen; however, all patients tested showed a significant increase in lymphocyte natural killer cell activity.<sup>7</sup>

*Multiple Myeloma.* Several reports have shown activity in multiple myeloma. One of the initial reports was by Mellstedt describing four patients with myeloma (one IgG- $\lambda$  type, two IgA- $\kappa$  type, and one Bence-Jones- $\kappa$  type) treated with human  $\alpha$  leukocyte IFN from 3-19 mos. All patients were symptomatic and had received no prior therapy. Two patients achieved a complete remission and two a partial remission.<sup>5</sup> Preliminary results from an American Cancer Society trial showed four "significant" responses in 14 evaluable patients. These results are preliminary and vague as "significant" has not been defined specifically.

M. D. Anderson Hospital and Tumor Institute has treated ten patients with multiple myeloma using the same dose schedule as in their breast trial.<sup>4</sup> One patient unresponsive to prior chemotherapy had a 38 per cent decrease in production of IgG- $\kappa$  and >50 per cent reduction in marrow plasmacytosis. A second patient who relapsed on chemotherapy had a partial response manifested by a 50 per cent decrease in IgG- $\lambda$  and a 50 per cent reduction in marrow plasmacytosis. Both patients had subjective improvement as well. It is not certain that all of these patients had active multiple myeloma.

*Non Hodgkin's Lymphoma.* T. C. Merigan treated six patients with non Hodgkin's lymphoma in 1971.<sup>6</sup> Three patients with progressive diffuse his-



tiocytic lymphoma, who had received extensive prior radiotherapy and chemotherapy, and three untreated patients with stage IV nodular lymphocytic poorly differentiated lymphoma were treated for 30 days. No reduction in tumor size was seen in the patients with diffuse lymphoma. All three patients with nodular lymphoma had a partial response. Two of these three patients maintained response for 9+ and 6+ mos.

Another 11 patients with lymphoma have been treated at M. D. Anderson Hospital and Tumor Institute.<sup>4</sup> Six patients had nodular, poorly-differentiated lymphocytic lymphoma. They were treated with  $3 \times 10^6$  units IM/day. Five of the six had relapsing disease on chemotherapy. There were two complete remissions and one partial remission. The two complete remissions have remained in remission for 60+ and 52+ wks and have been off treatment 46 and 26 wks, respectively. One patient with diffuse histiocytic lymphoma who had relapsed on chemotherapy, had no response. Four patients with chronic lymphocytic leukemia were treated; two patients showed improvement. One was classified as a partial response although marrow infiltration was not reduced 50 per cent.<sup>4</sup>

*Miscellaneous Solid Tumors.* Dr. Gutterman at M. D. Anderson Hospital recently presented preliminary data on several solid tumors at the First International Congress on IFN. He has treated ten patients with colorectal carcinoma with one partial response maintained for 1½ yrs. Eight patients with prostatic cancer and 11 patients with ovarian cancer have been treated with one partial response in each group.

*Toxicity.* Toxicity has been similar in all studies. Fever, fatigue, anorexia, and weight loss are common. Nausea, diarrhea, dry eyes and mouth, and alopecia have also been reported. Several investigators have also noted reactivation of herpes simplex lesions. Although there is no evidence for permanent hepatotoxicity, frequent elevations in SGOT are seen.

Myelosuppression demonstrated by leukopenia and thrombocytopenia is not uncommon. It has not been severe and generally resolves within a day or so of stopping or reducing IFN dose and may resolve even though treatment is continued.

## Summary

IFNs are potentially valuable therapeutic agents

for antiviral and anticancer treatments. Only recently have production techniques been sufficiently perfected to allow for adequate and safe quantities of material for clinical studies. Ideal dosage and schedule information is still lacking as well as ideal type, or perhaps subtype, for antitumor activity. Most clinical data to date are very preliminary. The first American Cancer Society trial in breast cancer has been completed with observed responses no better than those seen with single agent treatment and not as good as responses with combination chemotherapy. This antitumor activity in combination with its immunomodulating properties may enhance the activity of standard combination chemotherapy or may be of great benefit in the adjuvant setting. Toxicity is not insignificant.

Future trials are planned: to study the activity of IFNs from each of four sources — DNA recombinant, leukocyte, fibroblast, and lymphocyte; to study the types  $\alpha$ ,  $\beta$ , and  $\gamma$ ; and to determine for each type and source the maximum tolerated dosage, the minimum dosage for immune stimulation, and the optimal antitumor dosage.

## Self Assessment Questions

One or more answers may be correct.

- Interferons are naturally occurring substances which can be obtained from:
  - red blood cells
  - leukocytes
  - E. coli*
  - fibroblasts
- Most clinical studies have been done with leukocyte interferon which is 0.1 per cent pure. (T or F)
- Interferons may cause:
  - fever
  - chills
  - fatigue
  - leukopenia
  - all of the above
- Interferons have objective tumor activity in:
  - non-small cell lung cancer
  - breast cancer
  - melanoma
  - myeloma
- The antitumor mechanisms of action are well established. (T or F)

(Answers on page 138)

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## The President's Message

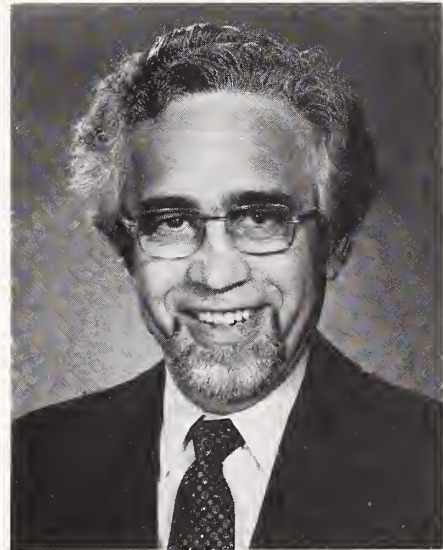
Last summer a representative of the Kansas State Nurses Association invited me to submit an editorial for their excellent new journal, "The Kansas Nurse." It was published in the October issue and I was invited to make further contributions. I submitted a subsequent editorial which they have chosen not to publish. I thought you might be interested in that editorial:

I doubt if in all of history there have been two professions who have worked in closer cooperation than the nursing and medical professions. We share a common goal of optimal patient care. We also have a common view of the patient as a whole individual and as part of a family and culture. We both recognize adequate health care must meet the patient's physical, emotional, and social needs.

When two professions have similar goals and views it is not surprising if there is a tendency for each to go its own way, but such devisiveness can only be counterproductive. Confrontation between our professions and the inevitable power struggle that follows can only serve to harm a cooperative effort which is aimed at providing the best health care for our patients and society. Much more progress can be made if we continue to work as a team with mutual respect for the special skills of the other.

A team does need a leader, and I continue to think that the appropriate leader of a health care team is a physician. This is said with the conviction that effective leadership requires respect not only *from* other members of the team but *for* the other members as well. I have stressed this to my colleagues at every opportunity and will continue to do so.

The issue on which we are growing apart is physician supervision of nurse practitioners, nurse midwives, nurse anesthetists, and clinical nurse specialists. While we view this as a health care issue, the nursing leadership seems to view this as a social issue . . . their recognition as a profession of high status. Indeed the nursing profession is growing in status and deserves our support and accolades. It is



high time that all physicians avoid putting down the nurses and recognize the significant advances that they have made in their profession. On the other hand, when nursing assumes roles that have traditionally been considered the practice of medicine, the health care issue demands that they carry out that role as a member of a physician directed health care team. This relationship is not meant to be demeaning but rather is designed to protect the health of the citizens of this state.

A handwritten signature in cursive script, reading "R. G. Gredwin".

President





## *A Barometer of Sorts*

At this writing, the public's attention is directed to the center ring where the new administration, decked out in red, white and blue spangles, is performing its death-defying (politically speaking, that is) act of cutting the federal budget — well, trying anyway. The idea is perennially popular — it remains a novelty only because previous efforts have failed, but the audience is still titillated by the new faces and costumes.

Up to this time, the claims of intention have been primarily at the level of campaign promises, but now they are formalized and made official by the confident newcomers. As such, they are still preamble — a little like the weight lifter walking up to the barbell and psyching himself for the effort. It is the next step in which the realities come to play, the actual willingness of the populace to face elimination of their favorite governmental dependencies. A reluctant House of Representatives will not make the process any easier, and we can anticipate a long line of advocates arriving on its doorstep to approve the idea of economy but never at the expense of their own programs which are so obviously necessary. The success of the administration's efforts, then, will not be determined by the worthiness of intent — that's not new — or the character of its methods — that's largely unknown — but whether the public is really ready to accept the social and economic deprivations necessary to the accomplishment.

There is considerable doubt that much can be accomplished — a lack of faith that the public *will* accept the sacrifices, the entrenchment of bureaucracies that will defy elimination, and the eternal infiltration of political maneuvering. Witness the President's first "victory," the successful effort to raise the debt ceiling, obviously made necessary by what has gone before but giving the Democrats their first enjoyment since November 3 as the Republicans were forced to promote an act that was one of their

favorite no-nos during their out-of-season period.

So the question remains, "Will the budget be cut?" which translates into, "What are we going to eliminate from the past and what will we forego in the future?" Beyond their basic roles as citizens, physicians will have a considerable stake in the process since medical problems will figure prominently in the maneuvering. It is probable that none of the established programs will be uprooted although they may be pruned — even the administration is promising an attitude of compassion, and pure politics will take care of the rest. But regarding the development of new programs, we suggest that the fate of national health insurance may prove a worthy indicator of the country's determination to accept the stringencies that will truly change the economy.

It has already been reported that NHI has, given the shift in political scenery, been moved to the back of the stage and relegated to a spear-carrying role. The truth of this estimate is yet to be seen, but there is always the chance for it to assume an understudy role and emerge in a new costume. As is the case with complicated socioeconomic concepts which are reduced to acronyms for ease of communication, national health insurance can be varied in form and extent as indicated by the many versions already offered from various interested parties. The most vigorous proponents — notably labor and the social welfare promoters — have utilized the full panoply of actual or contrived medical deficiencies to promote it: high cost of medical services, maldistribution of physicians, lack of services to certain groups, insensitive and ineffective actions by the medical profession and, strangest of all, purportedly higher levels of medical service and availability under the systems of other countries. As usually happens, organized medicine has been assigned the villain's role and, also as usual, its attempts to change the script come through as totally inadequate in the opin-

ion of the proponents and not even productive of anything like unanimity among the fellow opponents. (It is this wide range of character that makes it so satisfactory for commentator or editorial rhetoric.)

We are not at all convinced that the issue has been neutralized, even temporarily. This skepticism may not be fair to that great amorphous human mass known as "The Public," but we question if that body has reached a point of acceptance of the agonies of change. Rather, we suspect, such successes as meet the earlier efforts (the easiest phase) plus the taste of those agonies will lead to a progressive reluctance to forsake the expectations built up over the last few decades. (And we further suspect that the Democrats are counting on just that situation in a couple of years.)

But we do offer a few points about NHI that qualify it as a political barometer:

1. Coverage for the elderly and needy, whatever its defects, is well established and included among those items most assured of retention. Moreover, it is a logical conduit for the introduction of the service into other areas; that is, a piecemeal approach will be more palatable than any attempt at direct and complete coverage.

2. The social welfare pattern which has developed over these last decades offers formidable resistance to any significant degree of curtailment, and some form of NHI is one of its most potent promises.

3. NHI has strong appeal since it purports to relieve apparent inequities in an essential service to which all are deemed equally entitled.

4. The extensive ramifications of "health" care reach into virtually all other social welfare efforts.

5. Although the public is increasingly aware of the expense of social programs, the NHI concept still carries the connotation of free service — or, "As long as everyone is paying for it, why shouldn't we all get in on it?"

6. It involves a condition — health — that has come to be considered a "right" and, despite the increasing emphasis on individual responsibility in maintaining it, the government is looked to as the guarantor of the conditions promoting it through a multitude of social programs.

7. Primary resistance will come from those areas (organized medicine, private insurers, and so on) whose motives are considered selfish and antisocial.

One could add, as well, that each year brings an increase in the size of an electorate that has been

inured with the belief in the essentiality of these social programs, and any problems the programs present will be interpreted as a call for revision of method perhaps but not elimination of the concept. The obvious difficulties confronting the Social Security System, for example, are certain to bring some revision in the process of providing old age security, particularly the government's part in it, but not an abolition of social involvement in the mechanism. An avowed intent to save the world is standard equipment in youth, and these programs are considered essential to the process by many coming on.

Furthermore, various measurements of health status in countries having universal medical coverage are frequently cited as showing their superiority over the American system. The grossly unscientific features of the reports have not bothered the NHI proponents at all, and they have enjoyed the implication that such provisions are necessary for the survival of our deprived public. Reaction to them, however, has prompted additional studies which are beginning to bear important fruit. It has been shown, for example, that the superiority of mortality rates in those countries with national health programs applied to those conditions associated with lifestyle and environment (the group now receiving such avid attention under the heading of prevention). But those rates that involved conditions of direct patient care, provision of expert service backed by technological support (the management of illness, that is, not health) demonstrated a definite superiority of the American medical system.

At a practical political level, a case can be made for the proponents of NHI to proceed with their efforts despite — in fact, because of — any seeming unfavorable climate at the moment. It would obviously put the administration on record as opposing the effort or advocating such severe restrictions that it would be vulnerable to charges of even more insensitivity to the needs of the people. Any success would not only advance the cause but give another opportunity to claim victory over the reactionary forces.

So any indications that the national health insurance effort is on hold should be viewed with distinct skepticism. Rather than interpreting it as an opportunity to relax the containment effort, medicine would do well to continue a critical self-examination and develop viable remedies for such inequities as do exist. As they used to say in Oakland, the Raiders will be back. — *D.E.G.*



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## Tricyclic Antidepressants

(Continued from page 124)

2. Kessler, K. A.: *Psychopharmacology: A Generation of Progress* (Lipton, M. A.; DiMascio, A. and Killam, K. F., eds.). New York, Raven Press, pp. 1289-1302, 1978.

3. Asberg, M.; Crönnholm, B.; Sjöquist, F. and Tuck, D.: Relationship between plasma level and therapeutic effect of nortriptyline. *Br. Med. J.* 3:331-334, 1971.

4. Ziegler, V. E.; Clayton, P. J.; Taylor, J. R. and Biggs, J. T.: Nortriptyline plasma levels and therapeutic response. *Clin. Pharmacol. Ther.* 20:458-463, 1976.

5. Kragh-Sorensen, P.; Eggert-Hansen, C.; Baastrup, P. C. and Hridberg, E. F.: Self-inhibiting action of nortriptyline antidepressant effect at high plasma levels — a randomized, double-blind study controlled by plasma concentrations in patients with endogenous depression. *Psychopharmacologia* 45:305-312, 1976.

6. Braithwaite, R. A. *et al.*: Plasma concentration of amitriptyline and clinical response. *Lancet* 1:1297-1300, 1972.

7. Kupfer, D. J.; Hanin, I. and Spiker, D. G.: Amitriptyline plasma levels and clinical response in primary depression. *Clin. Pharmacol. Ther.* 22:904-911, 1977.

8. Glassman, A. H. *et al.*: Clinical implications of imipramine plasma levels for depressive illness. *Arch. Gen. Psychiatry* 34:197-204, 1977.

9. Fiori, M. G.: Tricyclic antidepressants: A review of their toxicology. *Current Developments in Psychopharmacology*, Volume 4 (Essman, W. B. and Valzelli, L., eds.). New York, Spectrum Publications, pp. 73-109, 1977.

10. Robinson, D. S. and Banker, E.: Tricyclic antidepressant toxicity. *JAMA* 236:1089-1090, 1976.

11. Vohra, J. *et al.*: The effect of toxic and therapeutic doses of tricyclic antidepressant drugs on intracardiac conduction. *Eur. J. Cardiol.* 3:219-225, 1975.

12. Ziegler, V. E.; Co, B. F. and Biggs, J. T.: Plasma nortriptyline levels and ECG findings. *Am. J. Psychiatry* 134:441, 1977.

13. Ziegler, V. E.; Co, B. F. and Biggs, J. T.: Electrocardiographic findings in patients undergoing amitriptyline treatment. *Dis. Nerv. Syst.* 38:697-699, 1977.

14. Bigger, J. T. *et al.*: Cardiovascular effects of tricyclic antidepressant drugs. *Psychopharmacology: A Generation of Progress* (Lipton, M. A.; DiMascio, A. and Killian, K. F., eds.). New York, Raven Press, pp. 1033-1045, 1978.

15. Spiker, D. G. *et al.*: Tricyclic antidepressant overdose: Clinical presentation and plasma levels. *Clin. Pharmacol. Ther.* 18:539-546, 1975.

16. Petit, J. M. *et al.*: Tricyclic antidepressant plasma levels and adverse effects after overdose. *Clin. Pharmacol. Ther.* 21:47-51, 1976.

17. Kantor, S. *et al.*: Imipramine-induced heart block: A longitudinal study. *JAMA* 231:1364-1366, 1975.

18. Preskorn, S. H.; Leonard, K. and Hignite, C.: Liquid chromatography of amitriptyline and related tricyclic compounds. *J. Chromatogr.*, in press.

19. Brunswick, D. J. and Mendels, J.: Reduced levels of tricyclic antidepressants in plasma from vacutainers. *Commun. Psychopharmacol.* 1:131-134, 1977.

20. Biggs, J. T. *et al.*: The electron beam ionization mass fragmentographic analysis of tricyclic antidepressants in human plasma. *J. Pharmacol. Sci.* 65:261-268, 1976.

## **RESOURCE FOR PHYSICIANS IN TROUBLE**

The Kansas Medical Society Impaired Physicians Program is now operational. If you desire more information concerning this program, if you know an impaired colleague who needs help, or if you are concerned about yourself or your spouse, please contact one of the Committee members nearest you, as listed below, or the KMS Executive Office. All such contacts will be held in strictest confidence and the caller need not reveal his name, if he/she so desires.

Alcoholism, other drug abuse, and medical/neurological/psychological problems are potentially treatable conditions. All impaired physicians should be encouraged to seek help at the earliest possible time in order to retain or regain full effectiveness to practice medicine. Please contact one of the following:

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## Dean's Letter

(Continued from page 94)

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## Congenital Heart Disease

(Continued from page 118)

7. National Center for Health Statistics: NCHS Growth Charts 1976. *Monthly Vital Statistics Report*, Vol. 25, No. 3, Supp. (HRA) 76-1120. Health Resources Administration, Rockville, MD.

8. Nellhaus, G.: Head circumference from birth to eighteen years. *Pediatrics* 41:106, 1968.

9. Naeye, R. L.: Organ and cellular development in congenital heart disease and in alimentary malnutrition. *J. Pediatr.* 67:447, 1965.

10. Lees, M. H.: Relative hypermetabolism in infants with congenital heart disease and undernutrition. *Pediatrics* 36:183, 1965.

11. Fyler, D. C. and Rosenthal, A.: Neonatal heart disease. *Neonatology* (Avery, G. B., ed.). Philadelphia, Lippincott, 1975.

12. Powell, G. F.; Brasel, J. A. and Blizzard, R. M.: Emotional deprivation and growth retardation simulating idiopathic hypopituitarism. *N. Engl. J. Med.* 276:1279, 1967.

13. Linde, L. M. et al.: Growth in children with congenital heart disease. *J. Pediatr.* 70:413, 1967.

14. Campbell, M. and Reynolds, G.: The physical and mental development of children with congenital heart disease. *Arch. Dis. Child.* 24:294, 1949.

15. Adams, F. H.; Lund, G. W. and Disenhouse, R. B.: Observations on the physique and growth of children with congenital heart disease. *J. Pediatr.* 44:674, 1954.

16. Silbert, A. et al.: Cyanotic heart disease and psychological development. *Pediatrics* 43:192, 1969.

17. Himwich, H. E. and Fazekas, J. F.: Comparative studies of the metabolism of the brain of infant and adult dogs. *Am. J. Physiol.* 132:454, 1941.

18. Haskins, R.; Finkelstein, N. W. and Stedman, D. J.: Infant stimulation programs and their effects. *Pediatr. Ann.* 7:123, 1978.

19. Marquis, P.: Cognitive stimulation. *Am. J. Dis. Child.* 130:410, 1976.

20. Miles, M.; Mattioli, L. and Diehl, A. M.: Parent counseling: Psychological support of parents of children with critical heart disease. *J. Kans. Med. Soc.* 78:134, 1977.

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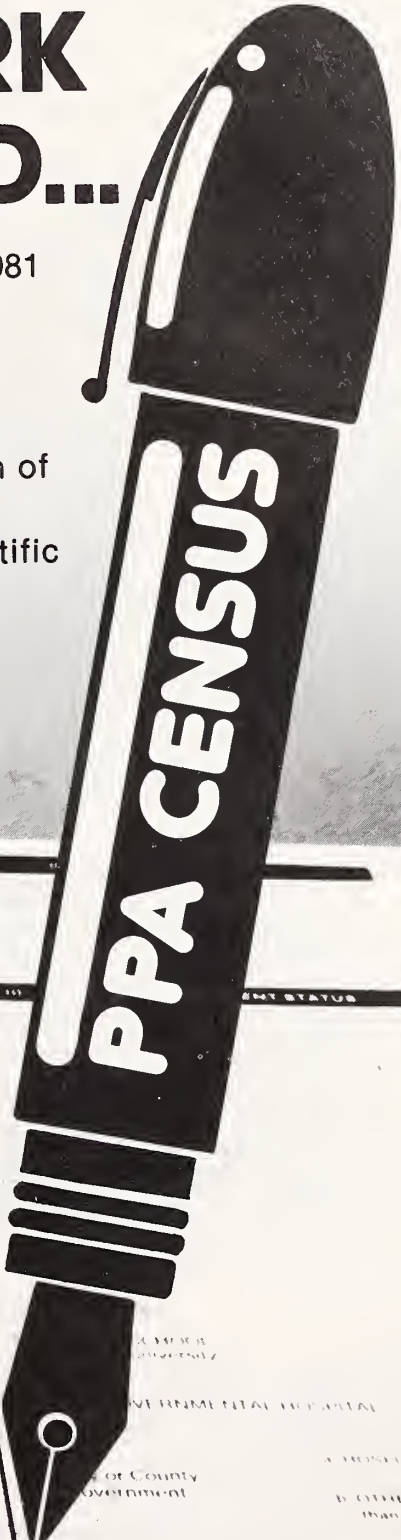
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## Interferons

(Continued from page 130)

### Answers

1. b, c, d
2. True
3. e
4. b, c
5. False

### Suggested Readings

1. Isaacs, A. and Lindenmann, J.: *Proc. R. Soc. Lond. (Biol.)* 147:258-267, 1957.
2. Interferon nomenclature. *Nature* 286:110, 1980.
3. Priestman, T. J.: Interferon: An anticancer agent? *Cancer Treat. Rev.* 6:223-237, 1979.
4. Gutterman, Jordan U. *et al.*: Leukocyte interferon induced tumor regression in human metastatic breast cancer, multiple myeloma, and malignant lymphoma. *Ann. Intern. Med.* 93:399-406, 1980.
5. Mellstedt, H. *et al.*: Interferon therapy in myelomatosis. *Lancet* 1:245-247, 1979.
6. Merigan, T. C. *et al.*: Preliminary observations on the effect of human leukocyte interferon in non Hodgkin's lymphoma. *N. Engl. J. Med.* 299:1449-1453, 1978.
7. Krown, S. E. *et al.*: Phase II trial of interferon in non small cell lung cancer. *AACR*, May 1980.

## Practice in Living

At the request of the Impaired Physicians Committee of the Kansas Medical Society, space has been made available in the *Journal* for a section featuring articles relating to concerns and problems unique to the lifestyle of the physician. Articles may focus on communication, stress and distress, responsibilities to self, medical marriage, recreation and leisure, and related topics. Manuscripts or suggested topics and questions are solicited and should be submitted to:

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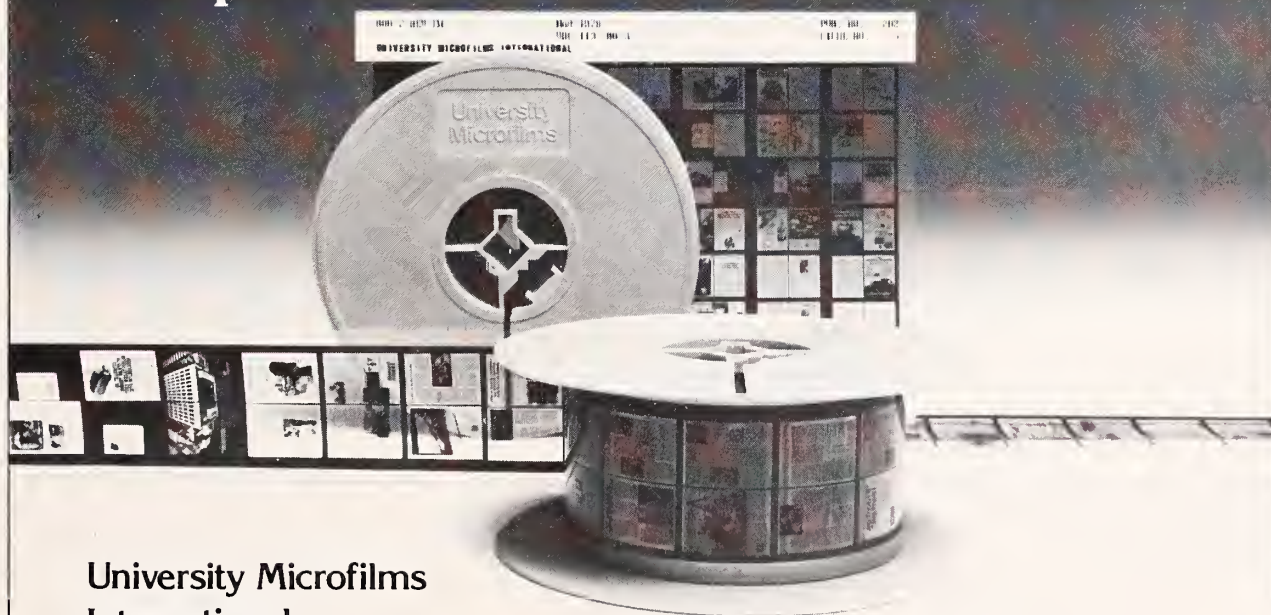
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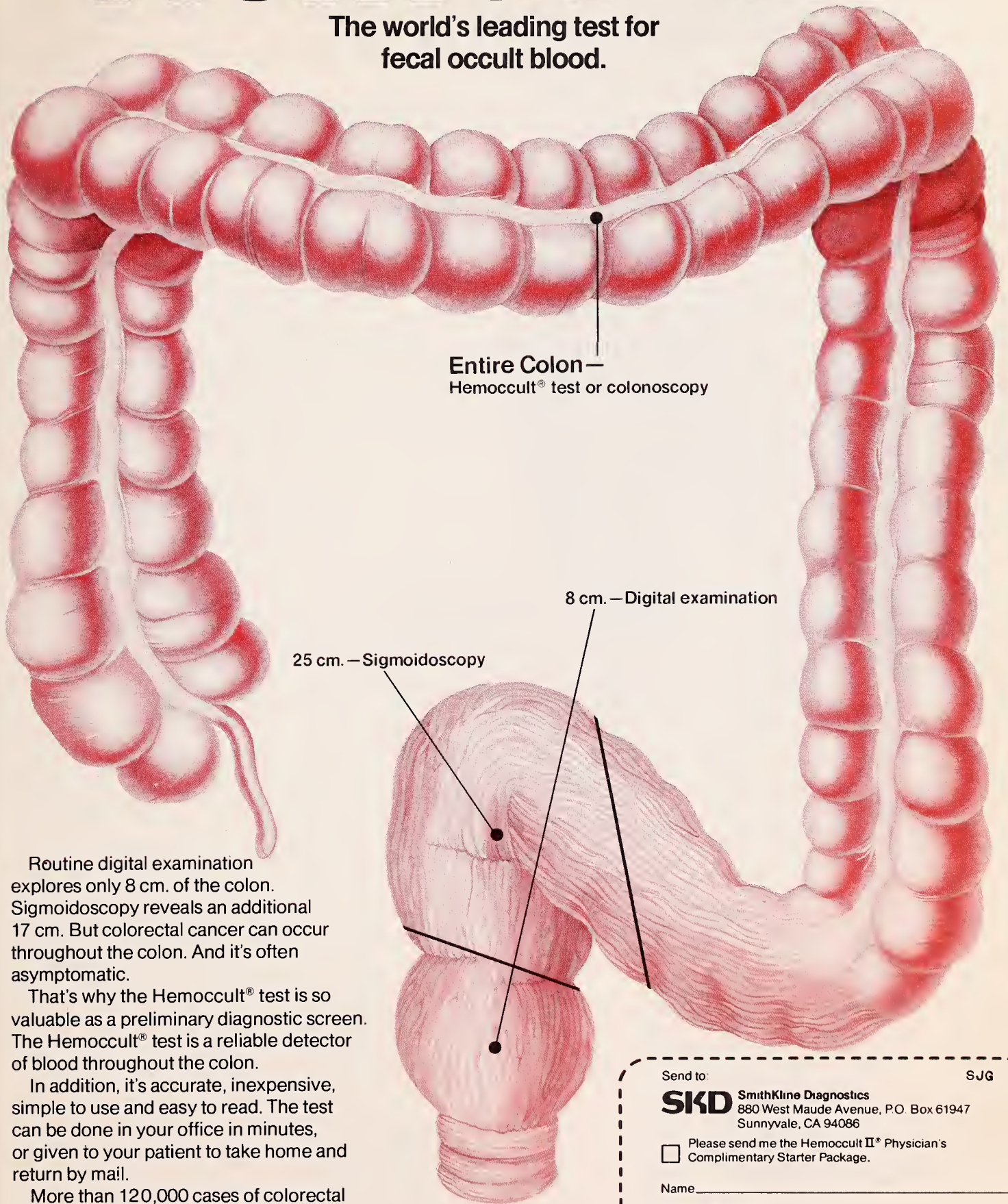
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Each tablet contains: aspirin, 325 mg; plus codeine phosphate, 30 mg, (Warning — may be habit-forming). 

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**DESCRIPTION:** Each tablet contains aspirin (acetylsalicylic acid) 325 mg plus codeine phosphate in one of the following strengths: No. 2 — 15 mg, No. 3 — 30 mg, and No. 4 — 60 mg. (Warning — may be habit-forming.) 

**CONTRAINDICATIONS:** Hypersensitivity to aspirin or codeine.

#### **WARNINGS:**

**Drug dependence:** Empirin with Codeine can produce drug dependence of the morphine type and, therefore, has the potential for being abused. Psychic dependence, physical dependence, and tolerance may develop upon repeated administration of this drug and it should be prescribed and administered with the same degree of caution appropriate to the use of other oral, narcotic-containing medications. Like other narcotic-containing medications, the drug is subject to the Federal Controlled Substances Act.

**Use in ambulatory patients:** Empirin with Codeine may impair the mental and/or physical abilities required for the performance of potentially hazardous tasks such as driving a car or operating machinery. The patient using this drug should be cautioned accordingly.

**Interaction with other central nervous system (CNS) depressants:** Patients receiving other narcotic analgesics, general anesthetics, phenothiazines, other tranquilizers, sedative-hypnotics, or other CNS depressants (including alcohol) concomitantly with Empirin with Codeine may exhibit an additive CNS depression. When such combined therapy is contemplated, the dose of one or both agents should be reduced.

**Use in pregnancy:** Safe use in pregnancy has not been established relative to possible adverse effects on fetal development. Therefore, Empirin with Codeine should not be used in pregnant women unless, in the judgment of the physician, the potential benefits outweigh the possible hazards.

#### **PRECAUTIONS:**

**Head injury and increased intracranial pressure:** The respiratory depressant effects of narcotics and their capacity to elevate cerebrospinal fluid pressure may be markedly exaggerated in the presence of head injury, other intracranial lesions or a pre-existing increase in intracranial pressure. Furthermore, narcotics produce adverse reactions which may obscure the clinical course of patients with head injuries.

**Acute abdominal conditions:** The administration of Empirin with Codeine or other narcotics may obscure the diagnosis or clinical course in patients with acute abdominal conditions.

**Allergic:** Precautions should be taken in administering salicylates to persons with known allergies: patients with nasal polyps are more likely to be hypersensitive to aspirin.

**Special risk patients:** Empirin with Codeine should be given with caution to certain patients such as the elderly or debilitated, and those with severe impairment of hepatic or renal function, hypothyroidism, Addison's disease, prostatic hypertrophy or urethral stricture, peptic ulcer, or coagulation disorders.

**ADVERSE REACTIONS:** The most frequently observed adverse reactions to codeine include light-headedness, dizziness, sedation, nausea and vomiting. These effects seem to be more prominent in ambulatory than in nonambulatory patients and some of these adverse reactions may be alleviated if the patient lies down. Other adverse reactions include euphoria, dysphoria, constipation, and pruritus.

The most frequently observed reactions to aspirin include headache, vertigo, ringing in the ears, mental confusion, drowsiness, sweating, thirst, nausea, and vomiting. Occasional patients experience gastric irritation and bleeding with aspirin. Some patients are unable to take salicylates without developing nausea and vomiting. Hypersensitivity may be manifested by a skin rash or even an anaphylactic reaction. With these exceptions, most of the side effects occur after repeated administration of large doses.

**DOSEAGE AND ADMINISTRATION:** Dosage should be adjusted according to the severity of the pain and the response of the patient. It may occasionally be necessary to exceed the usual dosage recommended below in cases of more severe pain or in those patients who have become tolerant to the analgesic effect of narcotics. Empirin with Codeine is given orally. The usual adult dose for Empirin with Codeine No. 2 and No. 3 is one or two tablets every four hours as required. The usual adult dose for Empirin with Codeine No. 4 is one tablet every four hours as required.

**DRUG INTERACTIONS:** The CNS depressant effects of Empirin with Codeine may be additive with that of other CNS depressants. See WARNINGS.



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# Vox Dox

Vox Dox Editor:

I have just read my *Journal* (January 1981) and feel obliged to comment on the socioeconomic article, "Perinatal Care Centers." I hope by this letter to emphasize that guidelines used to designate institutions that are developing various levels for perinatal care capabilities should be recognized as *just guidelines*. This type of endeavor is excellent and planning is needed; however, there is some inherent danger. We should be extremely cautious that these guidelines do not become mandates and requirements for privileges, or that they be interpreted as being synonymous with quality care.

Since these different levels have been instituted, I have on at least two occasions been told by the Nursing Supervisor of a level III institution that the patient I referred to that institution could not be referred back to our care because we were not classified as a level II institution. However, within a few days, the patient was discharged home. I assume a home is considered a level 0 institution.

My point is that, while I believe planning and goals for quality are admirable and desirable, we should not become so enamored with classifications that we forget the quality of care rendered by either physicians or institutions.

I also infer that the writers of these guidelines lack knowledge of the specialty of Family Practice, as they state that one must have a "board certified pediatrician"; and although they do not specify that the obstetrician should be board certified, they state that an obstetrician should be co-director. I submit that family physicians with special interest, training, and experience in neonatology and/or obstetrics could also adequately serve in these positions.

In Dr. Benage's commentary (third paragraph), he states, "The guidelines clearly define the need for obstetricians, pediatricians, well-trained family physicians. . . ." I would suggest that Dr. Benage probably means that the guidelines clearly define the need for well-trained obstetricians, well-trained pediatricians, and well-trained family physicians.

E. J. CHANEY, M.D.  
Box 250  
Belleville, KS 66935

*Editor's Note:* Dr. Chaney was recently named President-elect of the American Academy of Family Physicians.

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**Caution:** Federal law prohibits dispensing without prescription.

**Description:** Each Anusol-HC Suppository contains hydrocortisone acetate, 10.0 mg; bismuth subgallate, 2.25%; bismuth resorcin compound, 1.75%; benzyl benzoate, 1.2%; Peruvian balsam, 1.8%; zinc oxide, 11.0%; also contains the following inactive ingredients: dibasic calcium phosphate, and certified coloring in a hydrogenated vegetable oil base.

Each gram of Anusol-HC Cream contains hydrocortisone acetate, 5.0 mg; bismuth subgallate, 22.5 mg; bismuth resorcin compound, 17.5 mg; benzyl benzoate, 12.0 mg; Peruvian balsam, 18.0 mg; zinc oxide, 110.0 mg; also contains the following inactive ingredients: propylene glycol, propylparaben, methylparaben, polysorbate 60 and sorbitan monostearate in a water-miscible base of mineral oil, glyceryl stearate and water.

Anusol-HC Suppositories and Anusol-HC Cream help to relieve pain, itching and discomfort arising from irritated anorectal tissues. These preparations have a soothing, lubricant action on mucous membranes, and the antiinflammatory action of hydrocortisone acetate in Anusol-HC helps to reduce hyperemia and swelling.

The hydrocortisone acetate in Anusol-HC is primarily effective because of its antiinflammatory, antipruritic and vasoconstrictive actions.

**Indications and Usage:** Anusol-HC Suppositories and Anusol-HC Cream are adjunctive therapy for the symptomatic relief of pain, itching and discomfort in: external and internal hemorrhoids, proctitis, papillitis, cryptitis, anal fissures, incomplete fistulas, pruritus ani and relief of local pain and discomfort following anorectal surgery.

Anusol-HC is especially indicated when inflammation is present. After acute symptoms subside, most patients can be maintained on regular Anusol® Suppositories or Ointment.

**Contraindications:** Anusol-HC Suppositories and Anusol-HC Cream are contraindicated in those patients with a history of hypersensitivity to any of the components of the preparations.

**Warnings:** The safe use of topical steroids during pregnancy has not been fully established. Therefore, during pregnancy, they should not be used unnecessarily on extensive areas, in large amounts or for prolonged periods of time.

**Precautions: General:** Symptomatic relief should not delay definitive diagnoses or treatment.

Prolonged or excessive use of corticosteroids might produce systemic effects.

If irritation develops, Anusol-HC Suppositories and Anusol-HC Cream should be discontinued and appropriate therapy instituted.

In the presence of an infection the use of an appropriate antifungal or antibacterial agent should be instituted. If a favorable response does not occur promptly, the corticosteroid should be discontinued until the infection has been adequately controlled.

Anusol-HC is not for ophthalmic use.

**Pregnancy**

See "WARNINGS"

**Pediatric Use**

Care should be taken when using the corticosteroid hydrocortisone acetate in children and infants.

**Dosage and Administration:** Anusol-HC Suppositories—

Adults: Remove foil wrapper and insert suppository into the anus. Insert one suppository in the morning and one at bedtime for 3 to 6 days or until inflammation subsides. Then maintain comfort with regular Anusol Suppositories.

Anusol-HC Cream—Adults: After gentle bathing and drying of the anal area, remove tube cap and apply to the exterior surface and gently rub in. For internal use, attach the plastic applicator and insert into the anus by applying gentle continuous pressure. Then squeeze the tube to deliver medication. Cream should be applied 3 or 4 times a day for 3 to 6 days until inflammation subsides. Then maintain comfort with regular Anusol Ointment.

**NOTE:** If staining from either of the above products occurs, the stain may be removed from fabric by hand or machine washing with household detergent.

**How Supplied:** Anusol-HC Suppositories—boxes of 12

(N 0071-1089-07) and boxes of 24 (N 0071-1089-13) in silver foil strips with Anusol-HC printed in black.

Anusol-HC Cream—one-ounce tube (N 0071-3090-13) with plastic applicator.

Store between 59°-86°F (15°-30°C).

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**NOMINATING COMMITTEE**

The Nominating Committee of the Kansas Medical Society met in February and submits to the House of Delegates the following list of nominations for the elective offices of the Society. Wherever more than one nomination appears, they are presented in alphabetical order.

**President Elect**

**Kermit G. Wedel, M.D.,** Minneapolis. Born in 1932. Graduated from the University of Kansas School of Medicine in 1960. Is in Family Practice. Is now serving as First Vice President and AMA Alternate Delegate.

**First Vice President**

**Jimmie A. Gleason, M.D.,** Topeka. Born in 1933. Graduated from the University of Kansas School of Medicine in 1958. Practices Obstetrics and Gynecology. Is now Second Vice President and is serving as Chairman of the Legislative Committee.

**Second Vice President**

**F. Calvin Bigler, M.D.,** Garden City. Born in 1931. Graduated from Yale University School of Medicine in 1957. Practices General Surgery. Is Past President of the Kansas chapter, American College of Surgeons, and has been active in Society affairs.

**Louis M. Culp, M.D.,** Kansas City. Born in 1924. Graduated from the University of Kansas School of Medicine in 1953. Is in Family Practice. Is now serving as Councilor and is President of Kansas Foundation for Medical Care.

**Rex R. Fischer, M.D.,** Manhattan. Born in 1934. Graduated from the University of Nebraska College of Medicine in 1960. Practices Obstetrics and Gynecology. Currently is President of the Blue Shield Board of Directors.

**Constitutional Secretary**

**Jack R. Cooper, M.D.,** Shawnee Mission. Born in 1917. Graduated from Ohio State University School of Medicine in 1943. Practices Neurosurgery. Is currently serving as Secretary.

**Treasurer**

**William K. Walker, M.D.,** Sedan. Born in 1928. Graduated from the University of Kansas School of Medicine in 1945. Is in Family Practice. Is now serving as Treasurer.

**Speaker**

**Clair C. Conard, M.D.,** Dodge City. Born in 1927. Graduated from the University of Kansas School of Medicine in 1955. Practices Internal Medicine. Now serves as AMA Delegate and Speaker of the KMS House of Delegates.

**Vice Speaker**

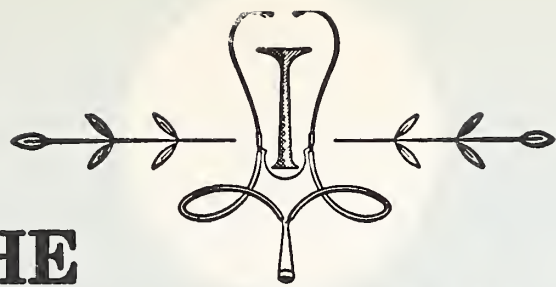
**G. Rex Stone, M.D.,** Manhattan. Born in 1929. Graduated from the University of Kansas School of Medicine in 1954. Practices General Surgery. Has been active in Society affairs.

**AMA Delegate**

**K. William Bruner, Jr., M.D.,** Wichita. Born in 1944. Graduated from Harvard Medical School in 1970. Practices Pathology. Currently serves on several KMS committees.

**Clair C. Conard, M.D.,** Dodge City. Born in 1927. Gradu-

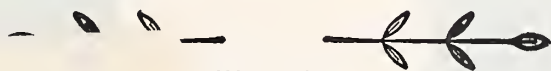
(Continued on page 144)



*Program Issue*

THE  
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APRIL  
1981



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# The JOURNAL of the KANSAS MEDICAL SOCIETY

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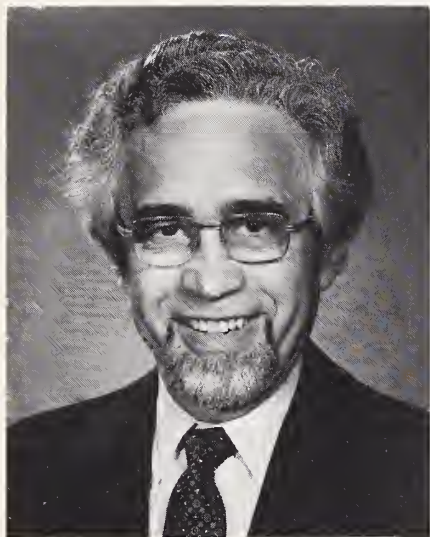
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*122nd Annual Session*

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The FACT is that approximately eight million people, or about 5 percent of the U.S. adult population, will use me during the current year. By contrast, the national health examination survey (1971-1975) found that 25 percent of the U.S. adult population experiences moderate to severe psychological distress. Additionally, studies of patient attitudes revealed that most patients have realistic views regarding the limitations of tranquilizers and a strong conservatism about their use, as evidenced by a general tendency to decrease intake over time. Finally, a six-year, large-scale, carefully conducted national survey showed that the great majority of physicians appropriately prescribe tranquilizers.

*Some people feel that patients being treated with anxiolytic drugs are "weak," can't tolerate the anxieties of normal daily living, and should be able to resolve their problems on their own without the help of medication.*

The FACT is that while most people can withstand normal, everyday anxieties, some people experience excessive and persistent levels of anxiety due to personal or clinical problems. An extensive national survey concluded that Americans who do use tranquilizers have substantial

# Facts

justification as evidenced by their high levels of anxiety. It was further noted that antianxiety drugs are not usually prescribed for trivial, transient emotional problems.

*Some people feel afraid of me because of the stories they've heard about my being harmful and having the potential to produce physical dependence.*

The FACT is that there are thousands of references in the medical literature documenting my efficacy and safety. Extensive and painstakingly thorough studies of toxicological data conclude that I am one of the safest types of psychotropic drugs available. Moreover, I do not cause physical dependence if the recommended dosage and therapeutic regimen are followed under careful physician supervision. However, I can produce dependence if patients do not follow their physicians' directions and take me for prolonged periods, at dosages that exceed the therapeutic range. Patients for whom I have been prescribed should be cautious about their use of alcohol because an additive effect may result.

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The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other anti-depressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

**Dosage:** Individualize for maximum beneficial effect. **Adults:** Anxiety disorders, symptoms of anxiety, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed, adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. **Geriatric or debilitated patients:** 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) **Children:** 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

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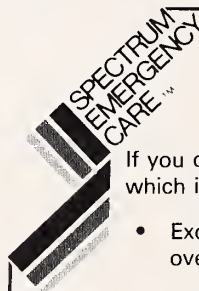
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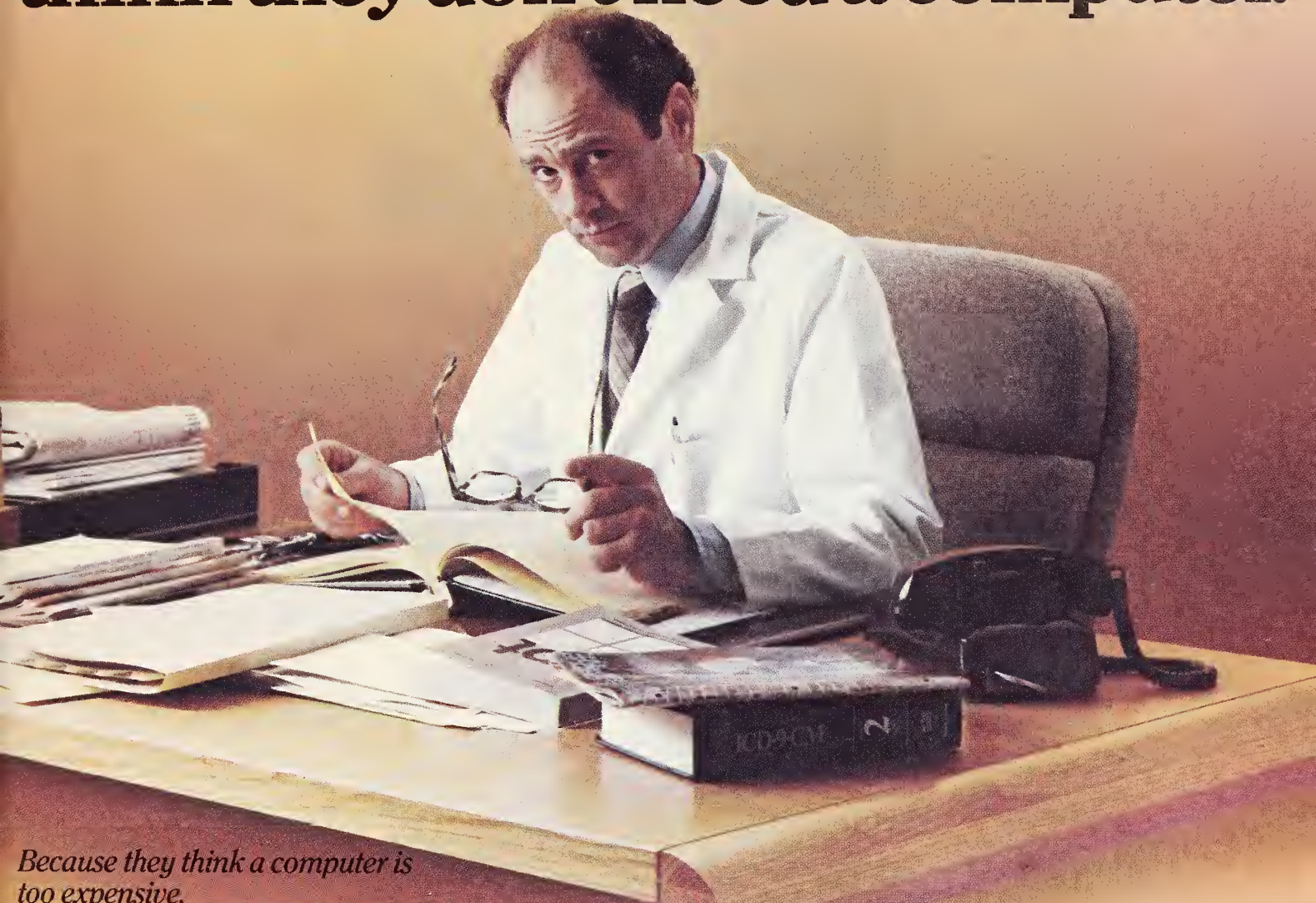
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**works well in your office...**

## **NEOSPORIN® Ointment** (polymyxin B-bacitracin-neomycin)

Each gram contains: Aerosporin® (Polymyxin B Sulfate) 5,000 units, bacitracin zinc 400 units, neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base); special white petrolatum qs; in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) foil packets.

**works just as well in their homes.**



- It's effective therapy for abrasions, lacerations, open wounds, primary pyodermas, secondarily infected dermatoses.
- It provides broad-spectrum overlapping antibacterial effectiveness against common susceptible pathogens, including staph and strep.

- It helps prevent topical infections, and treats those that have already started.

- It contains three antibiotics that are rarely used systemically.

- It is convenient to recommend without a prescription.

**NEOSPORIN® Ointment—for the office, for the home.**  
(polymyxin B-bacitracin-neomycin)

**Effective • Economical • Convenient • Recommendable**

Each gram contains: Aerosporin® (Polymyxin B Sulfate) 5,000 units, bacitracin zinc 400 units, neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base); special white petrolatum qs; in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) foil packets.

**WARNING:** Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as a failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

**PRECAUTIONS:** As with other antibacterial preparations, prolonged use may result in overgrowth of non-susceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

**ADVERSE REACTIONS:** Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section). Complete literature available on request from Professional Services Dept. PML.



**Burroughs Wellcome Co.**  
Research Triangle Park  
North Carolina 27709

# The Kansas Medical Society Auxiliary

## *56th Annual Convention, Hilton Inn, Salina*

### **THURSDAY, MAY 7**

- 1:00-5:00** Registration, Hilton Inn, Suite 110-112  
Free afternoon for tennis, golf, optional activity
- 6:00 SOCIAL HOUR**  
Salina Country Club, Cash Bar
- 7:00 SPORTS BANQUET & DANCE**  
Salina Country Club

### **FRIDAY, MAY 8**

- 6:30 KMSA/KMS STRICTLY FUN RUN**  
Hilton Inn Parking Lot
- 8:00-5:00** Registration, Hilton Inn, Suite 110-112
- 9:00 PRE-CONVENTION BOARD MEETING**  
Salina Country Club  
*Mrs. John D. Huff, Kansas City, President*  
*The Kansas Medical Society Auxiliary, Presiding*
- 12:00 LUNCHEON**  
Salina Country Club
- 1:30 GENERAL SESSION I**  
Marymount Little Theatre  
*Mrs. John D. Huff, Presiding*
- 5:00 KAMPAC HOSPITALITY SUITE**  
Suite 106-108  
Everyone invited
- 6:30 BUFFET AND AMAERF AUCTION, KMS & KMSA**  
Salina Country Club

### **SATURDAY, MAY 9**

- 7:30 PAST PRESIDENTS' BREAKFAST**  
Hilton Inn
- 8:00-9:00** Registration, Hilton Inn, Suite 110-112
- 9:00 GENERAL SESSION II**  
Marymount Little Theatre  
*Mrs. John D. Huff, Presiding*
- 12:00 PUNCHBOWL AND LUNCHEON**  
Rolling Hills Lodge  
Honoring Mrs. John G. Bates, Cuthbert, Georgia, National First Vice President
- 1:00 POST-CONVENTION BOARD MEETING**
- 2:30 TOUR:** The Lebold-Vahsholtz Mansion, Abilene
- 5:30 RECEPTION FOR PHYSICIANS AND SPOUSES**  
Cavalier Club  
Sponsored by the K.U. Alumni Association
- 7:00 ANNUAL PRESIDENT'S BANQUET**  
Cavalier Club  
Entertainment: *Max Armstrong*, Magician-Illusionist. Dance will follow.

### **SUNDAY, MAY 10**

- 7:00 EARLY BIRD BREAKFAST**  
Hilton Inn, Dover Room
- The Hospitality suite will be open during registration hours in suite 110-112.



### KMS Auxiliary Officers 1980-81

President	Mrs. John D. Huff (Evelyn)
President Elect	Mrs. Robert Moore (Betty)
1st Vice President	Mrs. David G. Laury (Meldon)
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Parliamentarian	Mrs. Ernest G. Neighbor (Frances)

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Frank Bichlmeier, M.D.	Shawnee Mission
F. Calvin Bigler, M.D.	Garden City
David G. Laury, M.D.	Ottawa
Donald Moeller, M.D.	Shawnee Mission
Robert F. Moore, M.D.	Caney
Alan Sanders, M.D.	Lawrence
Kermit Wedel, M.D.	Minneapolis

### KMA Convention Committee — 1981

Chairman	Kathleen Wedel
Vice Chairman	Nancy Macy
Auction Chairman	Helen Lungstrum
Auction Vice Chairman	Babette Freeman
Finance and Reservations	Linda Ellison
Registration	Ruby Reece
Hospitality	Glenda Schmidt
Publicity	Heather Smith
Transportation	Kathy Lasley
Courtesy	Martha Brummett
Friday Luncheon	Ginny Sloo
Saturday Luncheon	Sandy Mowery
Early Bird Breakfast	Carol Romeiser
Sports—	
Tennis	Wanda Macy
Golf	Sandy Marshall
Fun Run	Dick Brummett
Tour Chairman	Pam Barker

### Hostesses

The Saline County Medical Society Auxiliary

## THE UNIVERSITY OF KANSAS COLLEGE OF HEALTH SCIENCES AND HOSPITAL DIVISION OF HEALTH CARE OUTREACH AND CONTINUING EDUCATION

### Symposia:

#### KANSAS MEDICINE — A DECADE LATER

May 15, 1981

#### Guest Faculty:

DOUGLAS B. BOGART, M.D., University of Missouri at Kansas City  
 FRED C. BROWN, M.D., Wright State University, Dayton, Ohio  
 CRANSTON J. CEDERLIND, M.D., Shawnee Mission and Suburban Medical Centers, Kansas  
 KENNETH L. DERRINGTON, M.D., Shawnee Mission and Suburban Medical Centers, Kansas  
 WILLIAM W. EMMOT, M.D., Mercy Hospital, Independence, Kansas  
 KIRK E. FLURY, M.D., Suburban Medical Center, Bethesda, Maryland  
 TED E. LOCKWOOD, M.D., St. Luke's and Research Hospitals, Kansas City, Missouri  
 ROBERT D. WILBER, M.D., St. Luke's Hospital, Kansas City, Missouri  
 ROBERT L. WORTMANN, M.D., The Medical College of Wisconsin, Milwaukee

**Subjects to be discussed will include:** WHAT HAPPENED TO THE CLASS OF 1971?; NEW INTERVENTIONS IN CORONARY ARTERY DISEASE; NEW TRENDS IN DIAGNOSTICAL ULTRASOUND; NEW ALTERNATIVES TO RECONSTRUCTIVE SURGERY; NON-STRESS TESTS IN PRENATAL CARE; MEDICAL PRACTICE IN THE 80's — AN OVERVIEW; NEW TREATMENTS FOR PEPTIC ULCER DISEASE

#### Accreditation:

American Medical Association: 5 credit hours in Category 1  
 American Academy of Family Physicians: 5 Prescribed hours

**Registration Fee:** Physician — \$50.00

### Symposium on Trauma

May 22, 1981

#### University of Kansas Faculty

#### Accreditation:

American Medical Association: 8 credit hours in Category 1  
 American Academy of Family Physicians: 8 Prescribed hours

**Registration Fee:** Physicians — \$50.00

**For program announcement and information, write: OFFICE OF CONTINUING EDUCATION,  
 University of Kansas College of Health Sciences and Hospital, Kansas City, Kansas 66103**

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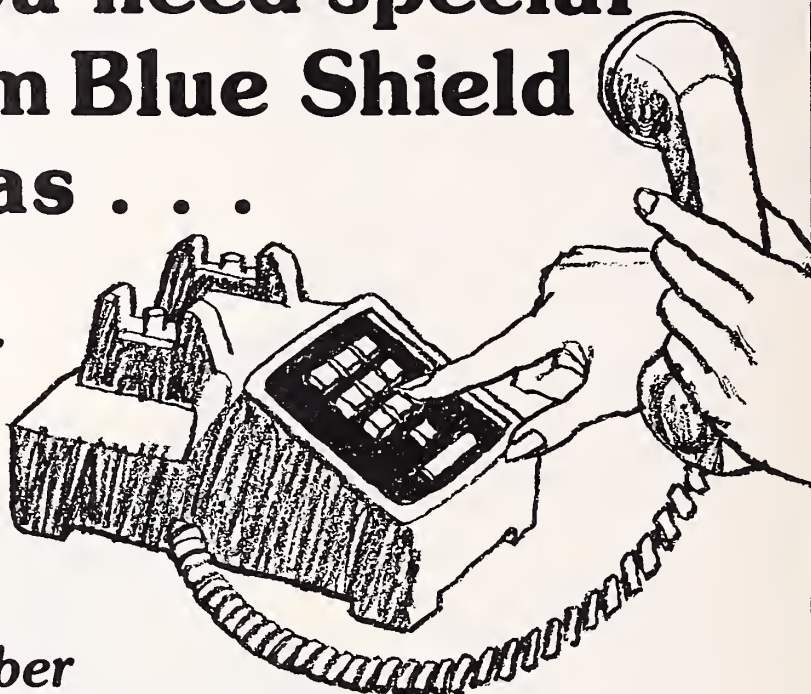


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# When you need special help from Blue Shield of Kansas . . .

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Calls on the "HOT LINE" cannot be transferred to a specific person because they do not come in on the regular Blue Shield switchboard. If you want to talk to a specific person, call through the regular number:

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and ask for the person by name. However, you may call on the "HOT LINE" and leave a message for your assigned representative.

*and don't forget . . .*

When you need a visit to your office, you have a specially assigned Professional Relations Representative who is ready to help. Call for your Blue Shield representative by name or leave your rep a message.

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**Blue Shield**  
 of Kansas

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# Pioneers in Medicine For the Family

## **BOOTS PHARMACEUTICALS, INC.**

Operating in the U.S. since 1977, Boots is a world-wide leader in pharmaceutical research and manufacture. Boots has directed its efforts toward providing products useful in the practice of family medicine.

Some of our better known products are Lopurin™, Ru-Tuss® and Ru-Vert®. This advertisement highlights four other products particularly useful for the family.

**F-E-P CREME® • SU-TON® • TWIN-K® • TWIN-K-CI™**





**For the Majority of  
Steroid-Responsive Dermatoses\*  
Seen in Family Practice**

## **F-E-P CREME®**

(Iodochlorhydroxyquin—Pramoxine HCl—Hydrocortisone)

### **The 4 in 1 Corticosteroid Cream**

Anti-inflammatory, antifungal, antibacterial actions, and, uniquely, a topical anesthetic for immediate relief of the itching or burning that frequently accompanies skin problems. One size (½ ounce), one strength for ease of prescription.

\*This drug has been evaluated as possibly effective for these indications. See prescribing information on last page of this advertisement.

**For the Geriatric Patient**

## **SU-TON®**

### **Liquid Tonic**

A pleasant tasting prescription tonic containing iron, vitamins, minerals, an analeptic and 18% alcohol. Ideal for those who may benefit from vitamin deficiency prevention. Just one tablespoon before each meal.

Each 45 ml (3 tablespoonfuls) contains:

Pentylentetrazol.	30 mg
Niacin.	50 mg
Vitamin B-1.	10 mg
Vitamin B-2.	5 mg
Vitamin B-6.	1 mg
Vitamin B-12.	3 mcg
Choline.	100 mg
Inositol.	50 mg
Manganese (as Manganese Sulfate).	1 mg
Magnesium (as Magnesium Sulfate).	2 mg
Zinc (as Zinc Sulfate).	1 mg
Iron (as Ferric Pyrophosphate, Soluble).	22 mg
Alcohol.	18%

See prescribing information on last page of this advertisement.





## For Potassium Supplementation Improved Compliance...

# TWIN-K®

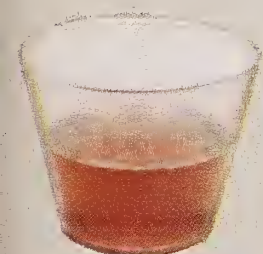
Each 15 ml supplies 20 mEq of potassium ions as a combination of potassium gluconate and potassium citrate in a sorbitol and saccharin solution.

The good tasting potassium supplement

- Designed for prophylactic and therapeutic use with diuretics and adrenocorticoids.
- Pleasant taste and convenient dosage aid patient compliance.

The organic salt of potassium can be given as a liquid without producing significant gastric symptoms and without an untoward effect on the mucosa of the small intestine.<sup>1</sup>

1. Beeson-McDermott, Textbook of Medicine, 15th Ed. 1979, WB. Saunders Co., Philadelphia, page 1959.



## In Cases with Chloride Deficiency...

# TWIN-K-Cl™

Each 15 ml supplies 15 mEq of potassium ions and 4 mEq of chloride ions as a combination of potassium gluconate, potassium citrate, and ammonium chloride in a sorbitol and saccharin solution.

The good tasting potassium supplement with chloride

- In hypokalemic hypochloremic alkalosis, chloride ions are required. Twin-K-Cl is specially formulated to be a good tasting chloride containing potassium supplement.
- Contains no potassium chloride. Twin-K-Cl is a carefully balanced combination of organic potassium salts plus ammonium chloride.
- In hypochloremic patients, potassium should be provided as the chloride salt, or chloride ion must be made available in some other form, such as ammonium chloride or sodium chloride.<sup>1</sup>

See prescribing information on last page of this advertisement.





## F-E-P CREME

### DESCRIPTION

F-E-P Creme is a topical water soluble anti-inflammatory, anesthetic preparation intended for treatment of various inflammatory skin disorders. The drug contains the following active ingredients:

Iodochlorhydroxyquin.	3.0%
Pramoxine Hydrochloride.	0.5%
Hydrocortisone.	1.0%

### INDICATIONS AND USAGE

Based on a review of this drug by the National Academy of Sciences-National Research Council and/or other information, FDA has classified the indications as follows: "Possibly" effective: Contact or atopic dermatitis; impetiginized eczema; nummular eczema; infantile eczema; endogenous chronic infectious dermatitis; stasis dermatitis; pyoderma, nuchal eczema and chronic eczematoid otitis externa, acne urtica; localized or disseminated neurodermatitis, lichen simplex chronicus; anogenital pruritus (vulvae, scroti, ani), folliculitis; bacterial dermatoses; mycotic dermatoses such as tinea (capitis, cruris corporis, pedis); moniliasis; intertrigo. Final classification of the less-than-effective indications requires further investigation.

Pramoxine Hydrochloride promptly relieves pain and itch. This compound may be used safely on the skin of those patients sensitive to the "caine" type local anesthetics.

### CONTRAINDICATIONS

Hypersensitivity to F-E-P Creme, or any of its ingredients or related compounds; lesions of the eye; tuberculosis of the skin; most viral skin lesions (including herpes simplex, vaccinia and varicella).

### WARNINGS

This product is not for ophthalmic use.

In the presence of systemic infections, appropriate antibiotics should be used.

### USE IN PREGNANCY

Topical steroids have not been reported to have an adverse effect on pregnancy. However, fetal abnormalities have been produced in pregnant laboratory animals that have been exposed to large doses of topical corticosteroids. Drugs of this class should not be used extensively during pregnancy.

### PRECAUTIONS

F-E-P Creme may be irritating to the skin in some patients. If irritation occurs discontinue therapy. Staining of clothes or hair may also occur with use of this preparation. Although systemic toxicity has not been reported with this drug, adrenal pituitary suppression is possible, especially when the drug is used extensively or kept under an occlusive dressing for a prolonged period.

Iodochlorhydroxyquin can be absorbed through the skin and interfere with thyroid function tests. Therapy with this preparation should stop at least a month before performance of these tests. The ferric chloride test for phenylketonuria (PKU) can be positive if F-E-P Creme is on the diaper or in the urine.

Prolonged use of this drug may result in an overgrowth of non-susceptible organisms requiring appropriate therapy.

### ADVERSE REACTIONS

Skin rash or hypersensitivity may occur following topical application.

The following local adverse reactions have been reported with topical corticosteroids, especially under occlusive dressings: burning, itching, irritation, dryness, folliculitis, hypertrichosis, acneiform eruptions, hypopigmentation, perioral dermatitis, allergic contact dermatitis, maceration of the skin, secondary infection, skin atrophy, striae, miliaria. Discontinue therapy if untoward reactions occur.

### DOSAGE AND ADMINISTRATION

Apply a thin layer of the drug to affected parts 3-4 times daily.

#### Note:

1. F-E-P Creme is distributed with 3.0% iodochlorhydroxyquin for use when antibacterial/antifungal activity is desired.
2. F-E-P Creme (Plain) is the regular formulation, but without iodochlorhydroxyquin.

Both of these preparations contain pramoxine hydrochloride, which has topical anesthetic properties. Pramoxine is not chemically related to benzoic acid or amide type topical anesthetics. Patients can tolerate pramoxine although they may be sensitive to other "caine" type of topical or local anesthetics.

### HOW SUPPLIED

F-E-P Creme 1/2 ounce (15 gm) tubes NDC 0524-0026-51  
F-E-P Creme Plain 1/2 ounce (15 gm) tubes NDC 0524-0025-51  
Federal law prohibits dispensing without a prescription.  
July 1980

## SU-TON®

### DESCRIPTION

Forty-five milliliters of SU-TON contain the following ingredients:

Pentylenetetrazol.	30 mg
Niacin.	50 mg
Vitamin B-1.	10 mg
Vitamin B-2.	5 mg
Vitamin B-6.	1 mg
Vitamin B-12.	3 mcg
Choline.	100 mg
Inositol.	50 mg
Manganese (as Manganese Sulfate).	1 mg
Magnesium (as Magnesium Sulfate).	2 mg
Zinc (as Zinc Sulfate).	1 mg
Iron (as Ferric Pyrophosphate, Soluble).	92 mg
Alcohol.	18%

### INDICATIONS AND USAGE

SU-TON contains pentylenetetrazol which may be helpful in the older patient as an analeptic agent when mental confusion and memory defects are present. SU-TON also contains vitamins, trace minerals, and iron, for those patients who may benefit by preventing the development of a deficiency.

### CONTRAINDICATIONS

Epilepsy, convulsive disorders or known history of sensitivity to any of the listed active ingredients.

### WARNINGS

The safety of this preparation during pregnancy and lactation has not been established. Use of this drug requires that the physician evaluate the potential benefits of the drug against any possible hazard to the mother and child.

### PRECAUTIONS

Although there are no absolute contraindications to pentylenetetrazol, it should be used with caution in epileptic patients or those known to have a low convulsive threshold or a focal brain lesion. Caution should be exercised when treating patients with high doses of SU-TON who have heart disease. While pentylenetetrazol does not act directly on the myocardium, the results from central vagal stimulation could cause bradycardia.

### ADVERSE REACTIONS

Pentylenetetrazol in high doses may produce toxic symptoms typical of central nervous system stimulants, which act on the higher motor centers and the spinal cord. Convulsions resulting from this drug are spontaneous and are not induced by external stimuli. They usually last for several minutes and are followed by profound depression and respiratory paralysis. Death has been reported from the ingestion of 10 grams of pentylenetetrazol.

### DRUG ABUSE

Drug dependence has not been reported with SU-TON.

### OVERDOSAGE

Signs and symptoms of acute overdose may be due principally from overstimulation of the central nervous system and from excessive vasodilatation with resulting autonomic nervous system imbalance. The symptoms may include the following: vomiting, agitation, tremors, hyperreflexia, sweating, confusion, hallucinations, headache, hyperpyrexia, tachycardia. Treatment consists of appropriate supportive measures. If signs and symptoms are not too severe and the patient is conscious, gastric evacuation may be accomplished by induction of emesis or gastric lavage.

Intensive care must be provided to maintain adequate circulation and respiratory exchange.

### DOSAGE AND ADMINISTRATION

One tablespoonful (15 ml) 3 times a day 20-30 minutes before meals. This drug is not for use in children under 12 years of age.

### HOW SUPPLIED

Bottles of 473 ml (16 fl oz) NDC 0524-0015-16  
Federal law prohibits dispensing without prescription.  
February 1980

## TWIN-K®

### DESCRIPTION

Each 15 milliliter (one tablespoonful) supplies 20 mEq of potassium ions as a combination of potassium gluconate and potassium citrate in a sorbitol and saccharin solution.

### INDICATIONS AND USAGE

For use as oral potassium therapy in the prevention or treatment of hypokalemia which may occur secondary to diuretic or corticosteroid administration. It may be used in the treatment of cardiac arrhythmias due to digitalis intoxication.

### CONTRAINDICATIONS

Severe renal impairment with oliguria or azotemia, untreated Addison's disease, adynamia episodica hereditaria, acute dehydration, heat cramps and hyperkalemia from any cause. This product should not be used in patients receiving aldosterone antagonists or triamterene.

### WARNINGS

TWIN-K (potassium gluconate and potassium citrate) is a palatable form of oral potassium replacement. It appears that little if any potassium gluconate-citrate penetrates as far as the jejunum or ileum where enteric coated potassium chloride lesions have been noted. Excessive, undiluted doses of TWIN-K may cause a saline laxative effect.

To minimize gastrointestinal irritation, it is recommended that TWIN-K be taken with meals or diluted with water or fruit juice. A tablespoonful (15 ml) in 8 ounces of water is approximately isotonic. More than a single tablespoonful should not be taken without prior dilution.

### PRECAUTIONS

Potassium is a major intracellular cation which plays a significant role in body physiology. The serum level of potassium is normally 3.8-5.0 mEq/liter. While the serum or plasma level is a poor indicator of total body stores, a plasma or serum level below 3.5 mEq/liter is considered to be indicative of hypokalemia.

The most common cause of hypokalemia is excessive loss of potassium in the urine. However, hypokalemia can also occur with vomiting, gastric drainage and diarrhea.

Usually a potassium deficiency can be corrected by oral administration of potassium supplements. With normal kidney function, it is difficult to produce potassium intoxication by oral administration. However, potassium supplements must be administered with caution since, usually, the exact amount of the deficiency is not accurately known. Checks on the patient's clinical status and periodic EKG and/or serum potassium levels should be made. High serum potassium levels may cause death by cardiac depression, arrhythmias or arrest.

In patients with hypokalemia who also have alkalosis and a chloride deficiency (hypokalemic hypochloremic alkalosis), there will be a requirement for chloride ions. TWIN-K is not recommended for use in these patients.

### ADVERSE REACTIONS

Symptoms of potassium intoxication include paresthesias of the extremities, flaccid paralysis, listlessness, mental confusion, weakness and heaviness of the legs, fall in blood pressure, cardiac arrhythmias and heart block. Hyperkalemia may exhibit the following electrocardiographic abnormalities: disappearance of the P wave, widening and slurring of the QRS complex, changes of the ST segment and tall peaked T waves.

TWIN-K taken on an empty stomach in undiluted doses larger than 30 ml can produce gastric irritation with nausea, vomiting, diarrhea, and abdominal discomfort.

### OVERDOSAGE

The administration of oral potassium supplements to persons with normal kidney function rarely causes serious hyperkalemia. However, if the renal excretory function is impaired, potentially fatal hyperkalemia can result. It is important to note that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration with or without EKG changes. Treatment measures include:

1. Elimination of potassium containing drugs or foods.
2. Intravenous administration of 300 to 500 mEq/hr of a 10% dextrose solution containing 10-20 units of crystalline insulin per 1000 milliliters.
3. Correction of acidosis.
4. Use of exchange resins or peritoneal dialysis.

In treating hyperkalemia, it should be noted that patients stabilized on digitalis can develop digitalis toxicity when the serum potassium concentration is changed too rapidly.

### DOSAGE AND ADMINISTRATION

The usual adult dosage is one tablespoonful (15 ml) in 6-8 fluid ounces of water or fruit juice, two to four times a day. This will supply 40 to 80 mEq of potassium ions. The usual preventative dose of potassium is 20 mEq per day while therapeutic doses range from 30 mEq to 100 mEq per day. Because of the potential for gastrointestinal irritation, undiluted large single doses (30 ml or more) of TWIN-K are to be avoided.

Deviations from this schedule may be indicated, since no average total daily dose can be defined, but must be governed by close observation for clinical effects.

### HOW SUPPLIED

Bottles of 1 pint (16 fl oz.)

NDC 0524-0021-16

### CAUTION

Federal law prohibits dispensing without prescription.  
July 1980

## TWIN-K-CI™

### DESCRIPTION

Each 15 ml (one tablespoonful) supplies 15 mEq of potassium ions and 4 mEq of chloride ions as a combination of potassium gluconate, potassium citrate, and ammonium chloride, in a sorbitol and saccharin solution.

### INDICATIONS

For use as oral potassium therapy in the prevention or treatment of hypokalemia which may occur secondary to diuretic or corticosteroid administration. It may be used in the treatment of cardiac arrhythmias due to digitalis intoxication.

Potassium and chloride are usually the salts of choice in the treatment of hypokalemia since chloride and potassium deficiencies are likely to be associated with each other.

### CONTRAINDICATIONS

Severe renal impairment with oliguria or azotemia, untreated Addison's disease, adynamia episodica hereditaria, acute dehydration, heat cramps and hyperkalemia from any cause. This product should not be used in patients receiving aldosterone antagonists or triamterene.

### WARNINGS

TWIN-K-CI is a palatable form of oral potassium replacement. Excessive, undiluted doses of TWIN-K-CI may cause a saline laxative effect.

To minimize gastrointestinal irritation, it is recommended that TWIN-K-CI be taken with meals or diluted with water or fruit juice. A tablespoonful (15 ml) in 8 ounces of water is approximately isotonic. More than a single tablespoonful should not be taken without prior dilution.

### PRECAUTIONS

Potassium is a major intracellular cation which plays a significant role in body physiology. The serum level of potassium is normally 3.8-5.0 mEq/liter. While the serum or plasma level is a poor indicator of total body stores, a plasma or serum level below 3.5 mEq/liter is considered to be indicative of hypokalemia.

The most common cause of hypokalemia is excessive loss of potassium in the urine. However, hypokalemia can also occur with vomiting, gastric drainage and diarrhea.

Usually a potassium deficiency can be corrected by oral administration of potassium supplements. With normal kidney function, it is difficult to produce potassium intoxication by oral administration. However, potassium supplements must be administered with caution since, usually, the exact amount of the deficiency is not accurately known. Checks on the patient's clinical status and periodic EKG and/or serum potassium levels should be made. High serum potassium levels may cause death by cardiac depression, arrhythmias or arrest.

In patients with hypokalemia who also have alkalosis and a chloride deficiency (hypokalemic hypochloremic alkalosis), there will be a requirement for chloride ions. TWIN-K-CI is recommended for use in these patients.

### ADVERSE REACTIONS

Symptoms of potassium intoxication include paresthesias of the extremities, flaccid paralysis, listlessness, mental confusion, weakness and heaviness of the legs, fall in blood pressure, cardiac arrhythmias and heart block. Hyperkalemia may exhibit the following electrocardiographic abnormalities: disappearance of the P wave, widening and slurring of the QRS complex, changes of the ST segment and tall peaked T waves.

TWIN-K-CI taken on an empty stomach in undiluted doses larger than 30 ml can produce gastric irritation with nausea, vomiting, diarrhea, and abdominal discomfort.

### OVERDOSAGE

The administration of oral potassium supplements to persons with normal kidney function rarely causes serious hyperkalemia. However, if the renal excretory function is impaired, potentially fatal hyperkalemia can result. It is important to note that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration with or without EKG changes.

Treatment measures include:

1. Elimination of potassium containing drugs or foods.
2. Intravenous administration of 300 to 500 mEq/hr of a 10% dextrose solution containing 10-20 units of crystalline insulin per 1000 milliliters.
3. Correction of acidosis.
4. Use of exchange resins or peritoneal dialysis.

In treating hyperkalemia, it should be noted that patients stabilized on digitalis can develop digitalis toxicity when the serum potassium concentration is changed too rapidly.

### DOSAGE AND ADMINISTRATION

The usual adult dosage is one tablespoonful (15 ml) in 6-8 fluid ounces of water or fruit juice, two to four times a day. This will supply 30 to 60 mEq of potassium ions and 8 to 16 mEq of chloride ions. The usual preventative dose of potassium is 20 mEq per day while therapeutic doses range from 30 mEq to 100 mEq per day. Because of the potential for gastrointestinal irritation, undiluted large single doses (30 ml or more) of TWIN-K-CI are to be avoided.

Deviations from this schedule may be indicated, since no average total daily dose can be defined, but must be governed by close observation for clinical effects.

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# Welcome to Salina

The City of Salina and the Saline County Medical Society invite you and your spouse to attend the 122nd annual meeting of the Kansas Medical Society to be held May 7-10, 1981, at the Hilton Inn in Salina.

The facilities of the Salina Country Club, the Hilton Inn, and the Salina Community Theatre are available for sports, meetings, luncheons, and dinners.

We think you will enjoy the relaxed atmosphere and have a pleasant time, plus a good meeting. Please come.

*Clarence N. Waters, M.D., President*  
Saline County Medical Society

## Hosts for the Meeting

*Saline County Physicians  
Arranging the 1981 Session*

### SCIENTIFIC PROGRAM COMMITTEE

Robert W. Brown, M.D., Chairman  
Frederick J. Hesse, M.D.  
Charles E. Livingston, M.D.  
David H. Clark, M.D.  
Marvin R. Gunn, M.D.

### GENERAL PROGRAM COMMITTEE

Clarence N. Waters, M.D., Chairman  
Robert W. Weber, M.D.  
Gerald K. Palmer, M.D.

### SPORTS DAY COMMITTEE

Monte L. Allen, M.D.  
Merle A. Hodges, M.D.



## SPECIALTY SOCIETIES

## Friday, May 8

11:30 KANSAS OB-GYN SOCIETY

Luncheon &amp; Business Meeting

Holiday Inn

12:00 KANSAS EAR, NOSE &amp; THROAT SECTION

Luncheon &amp; Business Meeting

Hilton Inn, Upstairs Conference Room

8:00 KANSAS CHAPTER, AMERICAN ASSOCIATION  
OF PHYSICIANS & SURGEONS

Hilton Inn, Suite 110

## Saturday, May 9

12:00 KANSAS SOCIETY OF ANESTHESIOLOGY

Luncheon &amp; Business Meeting

Hilton Inn, Exeter Room

12:00 AMERICAN MEDICAL WOMEN'S ASSOCIATION

Luncheon &amp; Business Meeting

Hilton Inn, Plymouth Room

12:00 KANSAS SECTION ON NUCLEAR MEDICINE

Luncheon &amp; Business Meeting

Hilton Inn, Upstairs Conference Room

## Sunday, May 10

12:00 KANSAS ALLERGY SOCIETY

Luncheon &amp; Business Meeting

Hilton Inn, Suite 110-112

1:00 KANSAS NEUROLOGICAL SOCIETY

Hilton Inn, Suite 106-108

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## Information for Authors

### Manuscript Preparation

Manuscripts must be typewritten, double spaced, leaving wide margins. Submit the original, plus one copy if possible.

**Titles** should be short, specific, and amenable to indexing. A subtitle is frequently used to keep the main title short.

**Summary:** All manuscripts should include a short abstract which is a factual (not descriptive) summary of the work.

**Author Responsibility:** The author is responsible for all statements made in his work, including changes made by the copy editor. Manuscripts are received with the explicit understanding that they are not simultaneously under consideration by any other publication. Publication elsewhere will be subsequently authorized at the discretion of the Editor.

**Galley Proof:** To make extensive changes in the article after the text has been set in type may require an additional cost which exceeds the original. The galley proof is for correction of ERRORS, and a rewriting of the article should be done on the original copy BEFORE it is submitted for publication.

**Drugs** should be called by their generic names; the trade names can be added in parentheses if they are considered important. All *units of measure* must be given in the metric system.

### References

Bibliographic references should not exceed 20 in number, documenting key publications. Personal communications and unpublished data should not be included. References should be arranged according to the order of citation, and not alphabetically. All references must be numbered consecutively and all must be cited in the text. Use the style of the AMA publications, giving: name of author, title of article, name of periodical, volume, pages, year.

### Illustrations

All material which cannot be set in type, such as photographs, line drawings, graphs, charts, tracings (for preparation of tables, see below) must be mounted on white cardboard. All must be identified on the back as to figure number, author's name, and an arrow indicating top. Legends should be typed double spaced on a separate sheet of paper, limited to a maximum of 30 words.

**Drawings and Graphs** should be done professionally in India ink on illustration board or high grade white drawing paper.

**Photographic** material should be submitted in duplicate as high contrast, glossy prints. Color illustrations will be accepted for publication only if the author assumes the cost.

THE JOURNAL will assume the cost of B/W engravings and cuts up to \$35 (or 5 cuts). Engraving cost for illustrations in excess of \$35 will be billed to the author.

### Tables

Because tables are set by hand, their cost is comparable to illustrations. A reasonable number of tables are allowed without cost to the author.

Tables should be self-explanatory and should supplement, not duplicate, the text. Since the purpose of a table is to compare or classify related items, the data must be logically and clearly organized. The relationship and comparison are established by the correct choice of column heads (captions of vertical columns) and stubs (left entries in horizontal listings).

Each table should be typed double spaced, including all headings, on separate sheets of lettersize paper. Oversize paper should not be used. Instead, repeat heads and stubs on a second sheet for tables requiring extra width. Number tables consecutively. Each table must have a title.

### Reprints

A reprint order form with a table covering cost will be sent with the galley proof to each contributor. Since the JOURNAL has no way to provide for reprints, they must be ordered by the author and purchased directly from the printer.

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# House of Delegates

Hilton Inn

**FRIDAY—MAY 8**

**7:30 Registration of Delegates**

**9:00 First Session**

**SUNDAY—MAY 10**

**7:30 Registration of Delegates**

**8:00 Second Session**

**Council Meeting and Luncheon at Conclusion of  
House of Delegates**

---

## Reference Committee

**FRIDAY, MAY 8—2:00 p.m.**

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## Educational Grants

The Kansas Medical Society is grateful for the convention program grants received from:

**Abbott Laboratories**  
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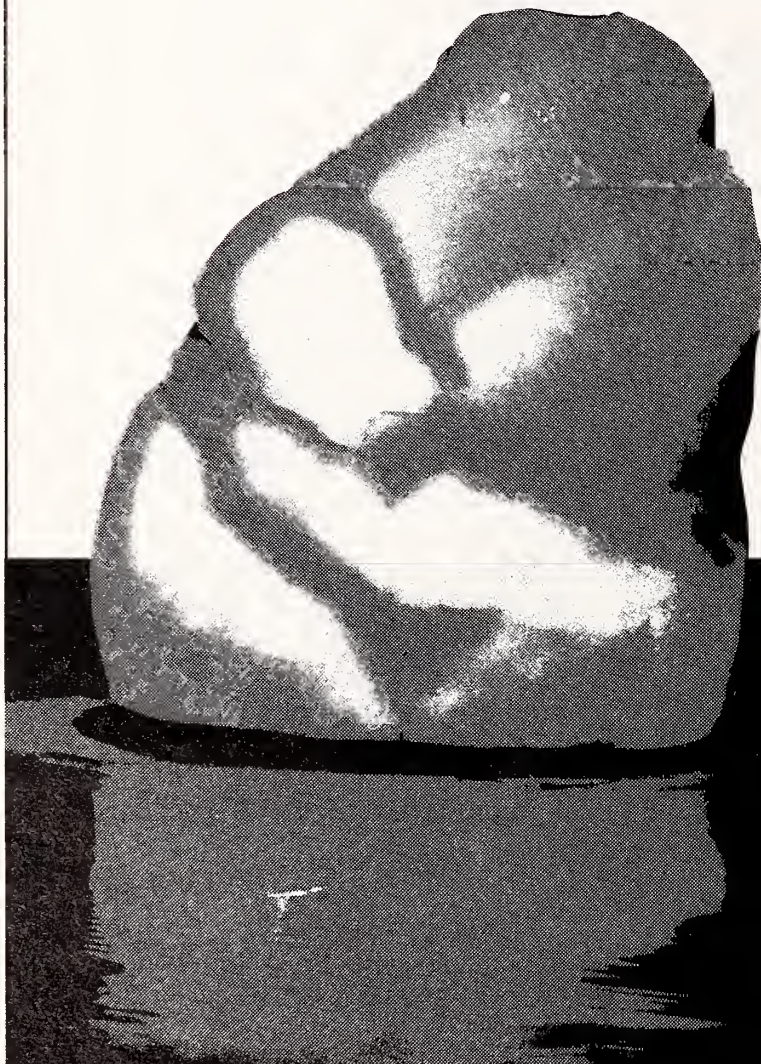
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## RESOURCE FOR PHYSICIANS IN TROUBLE

The Kansas Medical Society Impaired Physicians Program is now operational. If you desire more information concerning this program, if you know an impaired colleague who needs help, or if you are concerned about yourself or your spouse, please contact one of the Committee members nearest you, as listed below, or the KMS Executive Office. All such contacts will be held in strictest confidence and the caller need not reveal his name, if he/she so desires.

Alcoholism, other drug abuse, and medical/neurological/psychological problems are potentially treatable conditions. All impaired physicians should be encouraged to seek help at the earliest possible time in order to retain or regain full effectiveness to practice medicine. Please contact one of the following:

<b>John Cody, M.D., Hays</b>	<b>..... (913) 628-2871</b>
<b>Robert P. Hudson, M.D., Kansas City</b>	<b>... (913) 588-7040</b>
<b>H. Ivor Jones, M.D., Shawnee Mission</b>	<b>.. (913) 362-4040</b>
<b>George M. Penn, M.D., Topeka</b>	<b>..... (913) 272-3111</b>
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## VAIL EAR, NOSE, & THROAT SYMPOSIUM

For The Family Physician

JULY 31, AUGUST 1, AUGUST 2, 1981

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**SPONSOR:** The Associates of Otolaryngology, Denver, Colorado.

**GUEST FACULTY:** 20 distinguished otolaryngologists from private practice and universities.

**ACCREDITATION:** Approved for 20 hours of credit by The American Academy of Family Practice, The American Osteopathic Association, and The Colorado Medical Association.

**COURSE DESCRIPTION:** The most up to date material will be presented in a manner that will have relevance to the family doctor. Lectures, panel discussions, and practical workshops on all phases of ear, nose, and throat diseases will be provided by a distinguished guest faculty. Seven hours of didactic material will be provided each day. Updates on treatments and a "How I Do It" format will be used. An outline of all material will be provided in a very complete syllabus.

**TUITION:** \$250.00 per participant.

**FOR PROGRAM INFORMATION:** E.N.T. SYMPOSIUM, 950 E. Harvard, Suite 500, Denver, Colorado 80210, or call Lisa Lee, Program Secretary, (303) 744-1961.

## Practice in Living

At the request of the Impaired Physicians Committee of the Kansas Medical Society, space has been made available in the *Journal* for a section featuring articles relating to concerns and problems unique to the lifestyle of the physician. Articles may focus on communication, stress and distress, responsibilities to self, medical marriage, recreation and leisure, and related topics. Manuscripts or suggested topics and questions are solicited and should be submitted to:

Editor

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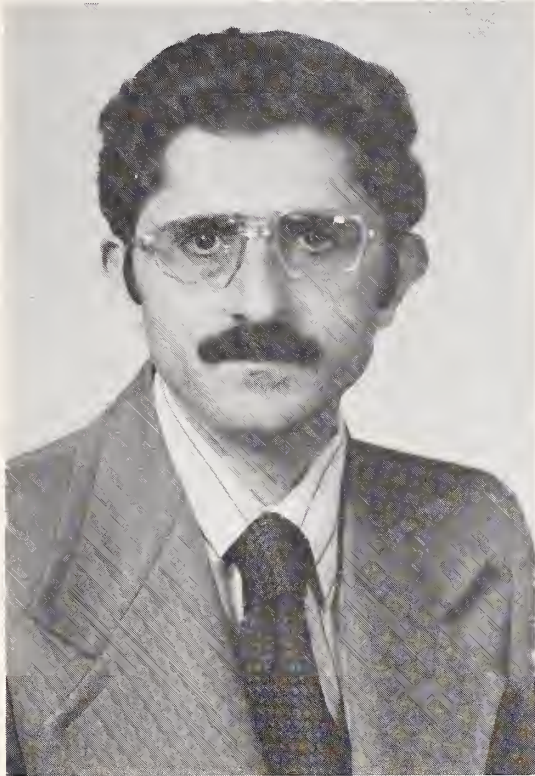


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# Distinguished Speakers

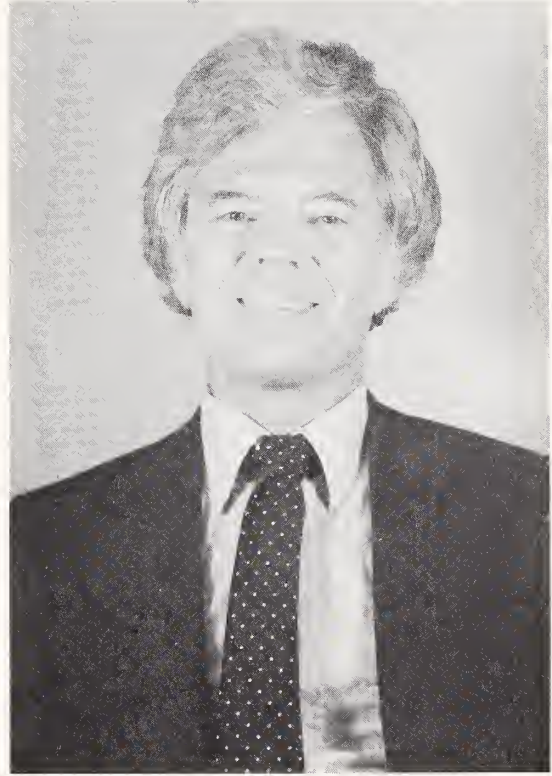


**DAVID BRAKE, M.D.**

Dr. Brake was born in 1943, and was graduated from the University of Colorado School of Medicine in 1968. He served an internship at the University of Cincinnati and a diagnostic radiology residency at the University of Wisconsin.

He has served in the United States Air Force as radiologist and as radiology instructor for the Physician Assistants' program. He has been director of the radiology residency program at Wesley Medical Center in Wichita, where he is currently a staff radiologist and coordinator of the computerized tomography section. He also serves as assistant clinical professor at UKSM-Wichita. He is certified by the National Board of Medical Examiners, and by the American Board of Radiology (diagnostic radiology).

Dr. Brake will discuss *The Impact of Computerized Tomography on Diagnosis and Treatment*.



**HUBERT H. BELL, M.D.**

Dr. Bell, 47, is a native of Kansas. He was graduated from UKSM in 1962, where he subsequently served an internship, residency, and fellowship. He is affiliated with several Kansas City hospitals, and is board certified in both internal medicine and cardiology. He has held faculty positions with UKSM-KC and with UMKC.

He is active in several professional organizations and has written extensively for medical publications.

Dr. Bell's topic is *Exercise Stress Testing*.





**RICHARD A. GUTHRIE, M.D.**

Born in Illinois in 1935, Dr. Guthrie was graduated from the University of Missouri School of Medicine in 1960. He interned with the Navy prior to serving a residency and fellowship at the University of Missouri Medical Center.

He is certified by the American Board of Pediatrics. He has been the recipient of numerous honors, including Outstanding Educator of America — 1974-75. He held several positions with the University of Missouri prior to appointment to his present position as professor and chairman of the Department of Pediatrics, UKSM-Wichita. He is involved in numerous professional activities, and has written extensively for medical publications.

Dr. Guthrie will speak on *Constant Infusion Pumps — Potential Uses in Clinical Practice*.

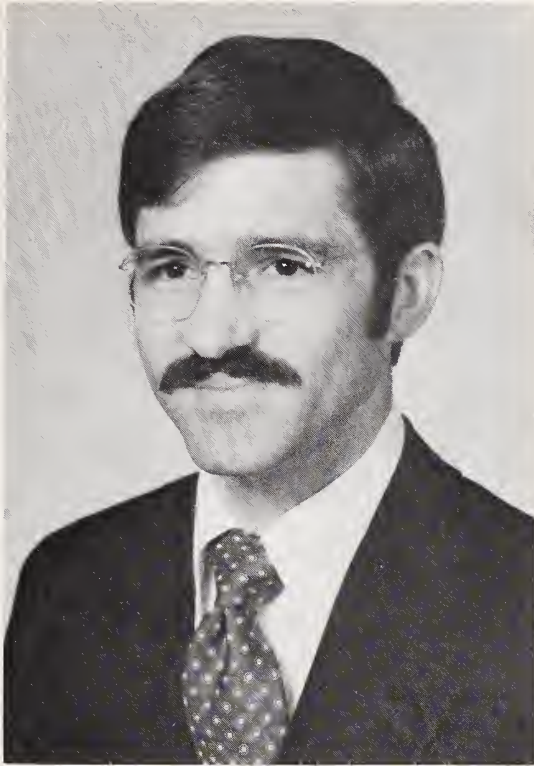


**WILLIAM E. JOBE, M.D.**

Dr. Jobe, born in Denver in 1931, was awarded his degree from the University of Colorado School of Medicine in 1957. He served an internship in Chicago, a three-year residency in radiology at the University of Colorado, and a three-month fellowship in cardiovascular pulmonary surgery and research in Paris.

He is certified by the American Board of Radiology for radiology, nuclear medicine, isotopes, and physics. He has held several faculty positions with the University of Colorado Medical Center, where he currently serves as Associate Clinical Professor. He is affiliated with a number of hospitals, and is involved in numerous professional activities. He has written and lectured on medical topics.

*Uses of Diagnostic Ultrasound in Clinical Practice* will be the topic of Dr. Jobe's presentation.

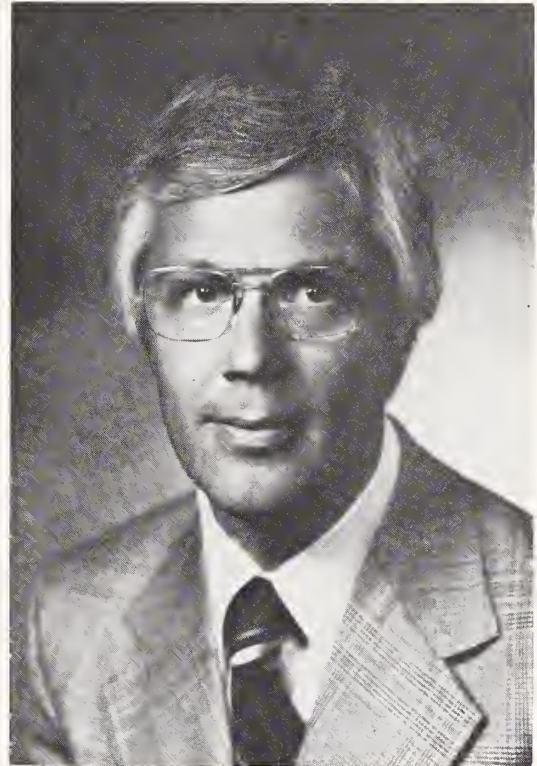


**BARRY L. MURPHY, M.D.**

Dr. Murphy was born in Salina in 1945. In 1971, he was graduated from the University of Kansas School of Medicine where he subsequently served internship, residency, and fellowship. He is now situated in Wichita where he practices internal medicine specializing in cardiovascular disease. He also serves as associate clinical professor at UKSM-Wichita.

He is certified by the American Board of Internal Medicine and the Cardiovascular Disease Subspecialty Board. He is a member of Alpha Omega Alpha honorary society and several professional organizations. He has written for various medical publications.

Dr. Murphy will discuss *Cardiac Pacing*.



**ALAN R. NELSON, M.D.**

Dr. Nelson, 47, is a native of Utah, now in private practice of internal medicine and endocrinology in Salt Lake City. He was graduated from Northwestern University Medical School in 1958, and served internship, residency, and fellowship in Oakland and Salt Lake City.

He is certified as a Diplomate of the American Board of Internal Medicine with subspecialty certification for endocrinology and metabolism, and currently serves as associate clinical professor of internal medicine at the University of Utah College of Medicine. He is active in various medical organizations, and has received several professional honors and awards. He has written extensively for medical publications. He is a member of the Board of Trustees of the American Medical Association.

Dr. Nelson will address the House of Delegates on various activities of the AMA.



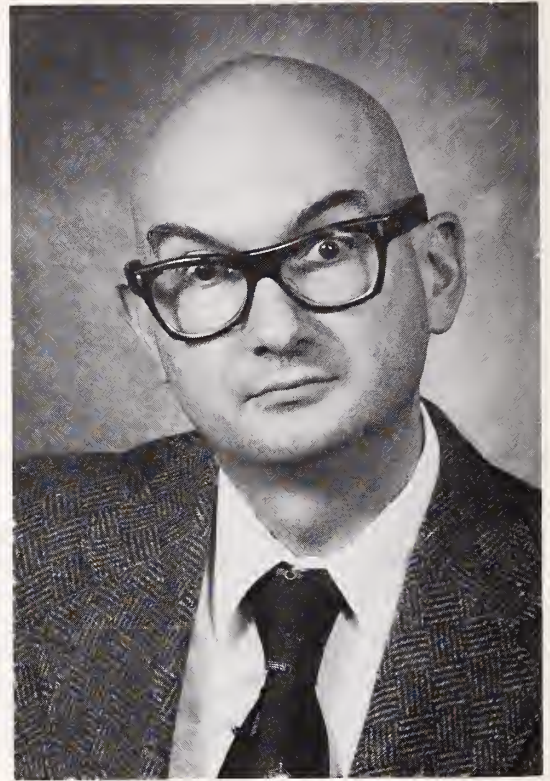


**DAVID F. PRESTON, M.D.**

Dr. Preston, Associate Professor of Diagnostic Radiology at UKSM-KC, was born in Kentucky in 1933. Graduated from the University of Cincinnati College of Medicine in 1959, he served internships in Washington, D.C. and Hawaii.

He is certified by the American Board of Nuclear Medicine. He is affiliated with numerous professional organizations, and has served as officer for several of them. He has been active in various research activities, and is currently involved in three research projects. He has been the recipient of various honors and awards, and has written extensively for medical publications.

Dr. Preston's presentation is entitled *Nuclear Medicine in Clinical Practice: 1981*.



**RALPH D. REYMOND, M.D.**

Dr. Reymond was born in Switzerland in 1937. He was graduated from the University of Maryland School of Medicine in 1967, and served internship and residency in Baltimore hospitals. He is certified in radiology. He currently is in the private practice of radiology and nuclear medicine in Topeka.

He has been issued patents on two pieces of medical equipment. He has written for various medical publications and is active in numerous professional organizations. In 1978, he studied extensively with various authorities in the field of after-loading interstitial radiotherapy.

Dr. Reymond will discuss *Linear Accelerators*.



### STERLING B. WILLIAMS, JR., M.D.

Born in Arkansas in 1941, Dr. Williams earned degrees in zoology and physiology from Illinois universities prior to graduation from the University of Arkansas Medical Center in 1973. His Ph.D. is pending. He served a residency at the University of Kansas School of Medicine, where he is now assistant professor in the Department of Gynecology and Obstetrics. He also is OB/GYN consultant to the Women's Correctional Institution, Lansing.

He is certified by the American Board of Obstetrics and Gynecology, and has been the recipient of various honors. He is active in professional organizations and has made numerous scientific presentations in the field of obstetrics and gynecology.

*Stress Testing In Pregnancy* will be Dr. Williams' topic.

---

## KMS IMPAIRED PHYSICIAN PROGRAM CONFERENCE

*A training workshop for those who wish to become Confronter-Managers*

**Thursday, May 7, 1981**

**9:00 AM-12:00 noon**

**Hilton Inn, Salina**

**Registration Fee \$10.00**

The primary objective of the program is to recognize the early signs and symptoms of possible physician impairment and to learn practical methods of effective intervention and followup.

The program format will consist of a video tape showing the progression of impairment in one physician; a presentation by C. Robert McGuire, of the Kansas State Board of Healing Arts; and members of the KMS Impaired Physician Committee.

As an organization accredited for continuing medical education, the Salina Health Education Foundation designates this continuing medical activity as meeting the criteria for 3 credit hours in Category I of the Physician's Recognition Award of the American Medical Association.



GENERAL INFORMATION

*Locations are in the Hilton Inn except where otherwise noted.*

Thursday, May 7

- 8:00 Registration  
Upstairs Lobby
- 9:00 KMS IMPAIRED PHYSICIAN PROGRAM CON-  
FERENCE
- 9:00 GOLF  
Salina Country Club
- 1:00 TENNIS  
Salina Country Club
- 1:00 SEXUAL DYSFUNCTION: ASSESSMENT AND  
COUNSELING
- 6:00 SOCIAL HOUR  
Salina Country Club
- 7:00 SPORTS BANQUET & DANCE  
Salina Country Club

Friday, May 8

- 6:30 KMSA/KMS STRICTLY FUN RUN  
Parking Lot
- 7:30 Registration  
Upstairs Lobby
- 9:00 FIRST HOUSE OF DELEGATES  
Plymouth, Portsmouth, Exeter Room
- 12:30 DELEGATES LUNCHEON  
Dover Room
- 2:00 REFERENCE COMMITTEE  
Plymouth, Portsmouth, Exeter Rooms
- 5:00 KAMPAC HOSPITALITY SUITE  
Suite 106-108
- 6:30 KANSAS MEDICAL AUXILIARY DINNER AND  
AMAERF AUCTION  
Salina Country Club

Saturday, May 9

- 7:30 Registration  
Upstairs Lobby
- 7:30 PAST PRESIDENTS' BREAKFAST  
Exeter Room
- 8:30 SCIENTIFIC PROGRAM: *New Technology in  
Medical Practice – Expectations and  
Indications*  
Salina Community Theater

- 12:30 GENERAL LUNCHEON  
Dover Room
- 2:00 SCIENTIFIC PROGRAM CONTINUES  
Salina Community Theater
- 5:30 RECEPTION FOR PHYSICIANS & SPOUSES  
Cavalier Club
- 7:00 ANNUAL PRESIDENT'S BANQUET  
Cavalier Club

Sunday, May 10

- 7:00 Registration  
Upstairs Lobby
- 7:00 EARLY BIRD BREAKFAST  
Dover Room
- 8:00 SECOND HOUSE OF DELEGATES  
Plymouth, Portsmouth, Exeter Room
- 12:00 COUNCIL LUNCHEON AND MEETING  
Dover Room

TELEPHONE NUMBERS

Salina Area Code — 913

- Hilton Inn ..... 827-0461
- Salina Country Club ..... 827-0388
- Cavalier Club ..... 827-5964
- Community Theater ..... 825-9490

# PRESIDENT'S BANQUET MAY 9, 1981

*Doctor and Mrs. Phillip A. Godwin extend a personal invitation to members of the Society and their guests to attend the President's Banquet on Saturday evening, May 9, 1981, at 7:00 PM, at the Cavalier Club.*



## **MAX ARMSTRONG, MAGICIAN-ILLUSIONIST**

Max Armstrong, one of the midwest's premiere entertainers, has performed in more than 30 states and has been featured on several television programs.

Max spends part of each summer at Santa's Workshop near Colorado Springs; the rest of the year he visits colleges, community festivals, schools, churches, and anywhere there is a demand for good magic and illusion.

---

*Music for dancing will be provided following the program.*



# Thursday, May 7

**8:00** Registration

Upstairs Lobby

**9:00** KMS IMPAIRED PHYSICIAN PROGRAM CONFERENCE

Plymouth Room

A half-day training workshop for those who wish to become Confronter-Managers.

The primary objective of the program is to recognize the early symptoms of possible physician impairment and to learn practical methods of effective intervention and followup. The program format will consist of a video tape showing the progression of impairment in one physician; a presentation by Robert McGuire, of the Kansas State Board of Healing Arts; and members of the KMS Impaired Physician Committee.

As an organization accredited for continuing medical education, the Salina Health Education Foundation designates this continuing medical activity as meeting the criteria for 3 credit hours in Category I of the Physician's Recognition Award of the American Medical Association.

**9:00** GOLF

Salina Country Club

**1:00** TENNIS

Salina Country Club

**1:00** SEXUAL DYSFUNCTION: ASSESSMENT AND COUNSELING

A workshop sponsored by the Kansas Psychiatric Society and the Menninger Foundation.

As an organization accredited for continuing medical education, the Menninger Foundation designates this continuing medical activity as meeting the criteria for 4 credit hours in Category I of the Physician's Recognition Award of the American Medical Association.

**6:00** SOCIAL HOUR

Salina Country Club

**7:00** SPORTS BANQUET & DANCE

Salina Country Club

*Locations are in the Hilton Inn except where otherwise noted.*

# Friday, May 8

- 6:30** KMSA/KMS STRICTLY FUN RUN  
Parking Lot  
Two runs: 2-mile and 6-mile. Both end at Brummet's for runner's breakfast and transportation back to Hilton. T-shirt provided: Sizes S, M, L, & XL.
- 7:00** KANSAS FOUNDATION FOR MEDICAL CARE  
Dover Room  
Breakfast & Business Meeting
- 7:30** Registration  
Upstairs Lobby
- 9:00** FIRST HOUSE OF DELEGATES  
Plymouth, Portsmouth, Exeter Rooms
- 11:30** KANSAS OB/GYN SOCIETY  
Holiday Inn  
Luncheon & Business Meeting
- 12:00** EAR, NOSE & THROAT SECTION  
Upstairs Conference Room  
Luncheon & Business Meeting
- 12:30** DELEGATES LUNCHEON  
Dover Room  
Speaker: *Fletcher Bell*, Kansas Commissioner of Insurance  
"The Health Care Stabilization Fund and the Joint Underwriting Association."
- 2:00** REFERENCE COMMITTEE  
Plymouth, Portsmouth, Exeter Rooms
- 5:00** KAMPAC HOSPITALITY SUITE  
Suite 106-108  
Cocktails & Hors d'Oeuvres; everyone invited (complimentary)
- 6:30** KANSAS MEDICAL AUXILIARY BUFFET DINNER AND AMAERF AUCTION  
Salina Country Club
- 8:00** KANSAS CHAPTER, AMERICAN ASSOCIATION OF PHYSICIANS & SURGEONS  
Suite 110

*Locations are in the Hilton Inn except where otherwise noted.*



# Saturday, May 9

- 7:30 Registration  
Upstairs Lobby  
7:30 PAST PRESIDENTS' BREAKFAST  
Exeter Room
- 

## SCIENTIFIC PROGRAM Salina Community Theater

- 8:30 Welcome  
8:40 IMPACT OF COMPUTERIZED TOMOGRAPHY ON  
DIAGNOSIS AND TREATMENT  
*David Brake, M.D.*  
9:20 USES OF DIAGNOSTIC ULTRASOUND IN CLINICAL PRACTICE  
*William E. Jobe, M.D.*  
10:00 Break  
10:30 NUCLEAR MEDICINE IN CLINICAL PRACTICE:  
1981  
*David F. Preston, M.D.*  
11:00 EXERCISE STRESS TESTING  
*Hubert H. Bell, M.D.*  
11:30 PANEL: Question & Answer
- 

- 12:00 KANSAS SOCIETY OF ANESTHESIOLOGY  
Exeter Room  
Luncheon & Business Meeting  
12:00 AMERICAN MEDICAL WOMEN'S ASSOCIATION  
Plymouth Room  
Luncheon & Business Meeting  
All physicians welcome.  
Speaker: *Virginia L. Tucker, M.D.*  
12:00 SECTION ON NUCLEAR MEDICINE  
Upstairs Conference Room  
Luncheon & Business Meeting  
12:30 General Luncheon  
Dover Room  
Speaker: *Wayne Johnston*  
Blue Cross-Blue Shield

*Locations are in the Hilton Inn except where otherwise noted.*

- 2:00** CARDIAC PACING  
*Barry L. Murphy, M.D.*
- 2:30** LINEAR ACCELERATORS  
*Ralph D. Reymond, M.D.*
- 3:00** STRESS TESTING IN PREGNANCY  
*Sterling B. Williams, M.D.*
- 3:30** CONSTANT INFUSION PUMPS: POTENTIAL  
USES IN CLINICAL PRACTICE  
*Richard A. Guthrie, M.D.*
- 

- 5:30** RECEPTION FOR PHYSICIANS & SPOUSES  
Cavalier Club  
Sponsored by KU Alumni Association
- 7:00** ANNUAL PRESIDENT'S BANQUET  
Cavalier Club  
Entertainment: *Max Armstrong*, Magician-  
Illusionist  
Dance will follow.

## Sunday, May 10

- 7:00** Registration  
Upstairs Lobby
- 7:00** EARLY BIRD BREAKFAST  
Dover Room  
(Tickets available at the door)
- 8:00** SECOND HOUSE OF DELEGATES  
Plymouth, Portsmouth, Exeter Rooms
- 12:00** KANSAS ALLERGY SOCIETY  
Suite 110-112  
Luncheon & Business Meeting
- 12:00** COUNCIL LUNCHEON AND MEETING  
Dover Room
- 1:00** KANSAS NEUROLOGICAL SOCIETY  
Suite 106-108

*Locations are in the Hilton Inn except where otherwise noted.*



# Councilor Reports

## *Activities in the Council Districts of Kansas*

### DISTRICT 1

It has been my pleasant duty during the past six years to serve as Councilor for District 1. The several presidents of KMS during those years, most recently Dr. Phillip Godwin, have met with members of this district in Atchison or in Hiawatha. They have uniformly provided insight into the workings of the KMS. The accruing benefits to Kansas Physicians and their patients through the efforts of the Kansas Medical Society are beyond expectations of the uninitiated, but these meetings have been "preaching to the choir."

We in KMS must each speak to colleagues who are inactive members or non-members, and urge their involvement. This will infuse new and needed vigor into our organization. Yes, we know you are busy — that is the very reason we need your input!

ROGER D. WARREN, M.D., *Councilor*

### DISTRICT 2

Council District 2 — Wyandotte County Medical Society — has kept busy. During the year our membership gains exceeded losses by one so that we had 385 voting members as of December 16, 1980.

An ad hoc Goals Committee, composed of long-time dedicated members, spent the year taking a hard look at our Society. They have concluded that there are good reasons for our existence, and have made many recommendations for change. The primary problem identified — that faced by every professional organization — is the matter of communication with individual members. During 1981 we will begin to implement the committee suggestions, and thus hope to strengthen our Society.

The Emergency Medical Care Committee is one of our largest, hardest working committees. Wyandotte county's unique position in emergency care can be attributed entirely to the efforts of past and present physician members of this committee and to our administrative staff. Two committee members — Dr. Richard Gruendel and I — have written an historical resume of *The Kare Story* that will soon be published.

Through our representatives to the Area Medical Council (an organization of the medical societies in the Greater Kansas City Area), we were involved

with Health Fair 80, sponsored by a local television station and Blue Cross/Blue Shield. This was so well received by the public that it may become an annual event in Kansas City.

LOUIS M. CULP, M.D., *Councilor*

### DISTRICT 3

The Johnson County Medical Society continues to grow, expand activities, and exert influence in the medical affairs of the district. An AMA negotiation seminar was co-sponsored with Shawnee Mission Medical Center in February 1980, with a good attendance at the two-day session. This excellent program was followed by a mock negotiation demonstration by four of the attendees at the April meeting.

In October, Lewis G. Allen, Jr., M.D. announced his semi-retirement and removal to Cherokee Village, Arkansas. Dr. Allen has given many years of devoted service to organized medicine and would have completed two terms as Councilor to KMS this year. His outspoken commentary on governmental intervention in medicine and constraints on private enterprise will be missed by all.

The Johnson County Medical Society is in the process of establishing a fund to aid participants in the Impaired Physician Program. Some physicians, because of their impairment, have suffered financial losses and need additional assistance in returning to a productive status. We encourage KMS to implement a similar program on a statewide basis.

The KMS annual meeting was co-hosted with the energetic help of Wyandotte County Medical Society. Sports Day, held at Wolf Creek Country Club was arranged by Henry B. Sullivan, M.D., Johnson County Medical Society, and Charles B. Crockett, M.D., Wyandotte County Medical Society.

Erik Nye, M.D. and John Mallory, M.D. have been appointed to serve on the advisory board of Med-Act by the Johnson County Board of Commissioners. This outstanding emergency medical care service has been fostered through the vigorous efforts of several members of the society, including Drs. A. A. Armbruster and Charles E. Jones.

Through the efforts of the Johnson County Medical Society members, the Area Medical Council

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blocked an attempt by sponsors of Health Fair '80 from performing multiphasic blood screening tests in conjunction with their commercially oriented program. Without appropriate medical supervision, such activities were felt to be unproductive, confusing to the consumer, and lacking significant medical usefulness.

The rapid growth of the society during the past six years reflects the influx of physicians to the county in response to a growing population and expanding medical care facilities. Active membership in the society has increased 70 per cent in this six-year period, as follows:

<i>Year (As of Jan. 1)</i>	<i>Active Members</i>	<i>Corresponding Retired/LOA</i>	<i>Total Membership</i>
1975	154	59	213
1976	167	65	232
1977	186	73	259
1978	192	76	268
1979	220	79	299
1980	234	83	317
1981	261	91	352

JAMES G. BRIDGENS, M.D., *Councilor*

DISTRICT 5

On September 17, 1980, Phillip Godwin, M.D., President of the Kansas Medical Society, was the dinner guest of Council District 5. Jerry Slaughter, Executive Director of the Kansas Medical Society, also was our guest, along with the physicians' spouses.

There were no known significant problems in this district that required the attention of the Councilor.

KENNETH M. BOESE, M.D., *Councilor*

DISTRICT NO. 6

Stuart Averill, M.D. became President of the Shawnee County Medical Society in 1980, taking over from John Runnels, M.D. Topeka's growing role as a regional medical center was reflected both in the number of new physicians entering practice, and in the increase in medical society membership. Shawnee County Medical Society gained 33 members in 1980, reaching a total of 323, an all-time high.

Early in 1980, we developed five-second and thirty-second radio and television spot announcements, professionally done, to publicize the society's Physician Referral Service. Our able Executive Director, Byron Cook, and his staff handle 450-500 calls per month from persons seeking either general or spe-

cialty care. The system works smoothly. It is not only helpful to patients, but it is an effective public relations tool.

Our Building Committee, chaired by Millard Spencer, M.D. was, by year's end, continuing to study the feasibility of constructing new headquarters for the SCMS and SCM Foundation, our educational arm.

Other highlights included:

- SCMS hosted the Bar Association for the Annual Physician-Attorney banquet
- We held a joint meeting in October 1980 with District 1, Kansas Nurses Association, where we were able to share mutual concerns in a friendly atmosphere.
- A *decrease* in dues for the local society was achieved because of good management (and more members!).

Our effective and respected KMS Councilor, Mill Spencer, relinquished his post in 1980. His services have been much appreciated by his peers at both the state and local levels.

J. H. RANSOM, M.D., *Councilor*

DISTRICT 7

The Flint Hills District Medical Society, representing most of the physicians of Lyon, Morris, Waubesaunsee, Osage, Coffey and Chase Counties, is virtually synonymous with Council District 7. Five new physicians who have moved to Emporia to live and practice include two internists, an obstetrician-gynecologist, a pathologist, and a pediatrician. Most have helped in presenting our scientific programs this year.

In addition to those who live here, Robert Durst, M.D. is commuting from Topeka to practice dermatology two days/week, and Mauricio Masferrer, M.D. is commuting from Topeka to practice psychiatry five days/week; Dr. Masferrer plans to move to Emporia when his naturalization process is completed. Under discussion at present is the desire for itinerant practice one or two days/week by qualified non-community physicians whose services are needed here, but whose practices outside this district include surgery. There is concern that they would either have to take patients to outlying hospitals or not always be available to follow through on procedures done here.

New physicians planning to commence full-time practice in this district this summer include Joseph E. Bosiljevac, Jr., M.D., surgeon, and Jimmy



Browning, M.D., family physician, the latter at Cottonwood Falls.

Most of the monthly meetings have been held at the Emporia Country Club, but one pleasant joint meeting with physicians and spouses was held at the home of President Scott Ryan, M.D. Phillip Godwin, M.D., President of the KMS, spoke here on election night last November; his good report was supplemented by one from Jerry Slaughter, KMS Executive Director.

We encourage active participation by all district society members in the KMS, the AMA, and the specialty societies.

MARVIN D. SNOWBARGER, M.D., *Councilor*

### DISTRICT 8

Arkansas City's honorable city commission and hospital advisory board have implemented Hospital Affiliates Management Group to control Arkansas City Memorial Hospital. This was done in spite of unanimous opposition by the medical staff.

We are encouraged to have a conservative party in power. Possibly we can eliminate PSRO and the disaster of national health insurance. All concerned physicians are encouraged to join the Association of American Physicians and Surgeons.

STEPHEN J. SMITH, M.D., *Councilor*

### DISTRICT 9

There have been changes in the medical field in Council District 9. A renal dialysis unit has been added at Salina and a nephrologist has been added to the medical staff. The Smokey Hill Family Practice Residency Program has increased in number and obtained facilities in which to practice. Plans are underway for a CAT and linear accelerator unit for Salina.

There has been an increase in the number of physicians in several of the communities, with an overall improvement in the ability to supply good medical care.

President Phillip A. Godwin, M.D. spoke at a district meeting in Salina in November 1980, outlining problems in the health care delivery system with possible solutions and areas that need to be improved.

H. D. DOUBEK, M.D., *Councilor*

### DISTRICT 10

District 10 physicians met with President Phillip Godwin and Jerry Slaughter on November 3, 1980,

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**Description:** Each Anusol-HC Suppository contains hydrocortisone acetate, 10.0 mg; bismuth subgallate, 2.25%; bismuth resorcin compound, 1.75%; benzyl benzoate, 1.2%; Peruvian balsam, 1.8%; zinc oxide, 11.0%; also contains the following inactive ingredients: dibasic calcium phosphate, and certified coloring in a hydrogenated vegetable oil base.

Each gram of Anusol-HC Cream contains hydrocortisone acetate, 5.0 mg; bismuth subgallate, 22.5 mg; bismuth resorcin compound, 17.5 mg; benzyl benzoate, 12.0 mg; Peruvian balsam, 18.0 mg; zinc oxide, 110.0 mg; also contains the following inactive ingredients: propylene glycol, propylparaben, methylparaben, polysorbate 60 and sorbitan monostearate in a water-miscible base of mineral oil, glyceryl stearate and water.

Anusol-HC Suppositories and Anusol-HC Cream help to relieve pain, itching and discomfort arising from irritated anorectal tissues. These preparations have a soothing, lubricant action on mucous membranes, and the antiinflammatory action of hydrocortisone acetate in Anusol-HC helps to reduce hyperemia and swelling.

The hydrocortisone acetate in Anusol-HC is primarily effective because of its antiinflammatory, antipruritic and vasoconstrictive actions.

**Indications and Usage:** Anusol-HC Suppositories and Anusol-HC Cream are adjunctive therapy for the symptomatic relief of pain, itching and discomfort in: external and internal hemorrhoids, proctitis, papillitis, cryptitis, anal fissures, incomplete fistulas, pruritus ani and relief of local pain and discomfort following anorectal surgery.

Anusol-HC is especially indicated when inflammation is present. After acute symptoms subside, most patients can be maintained on regular Anusol® Suppositories or Ointment.

**Contraindications:** Anusol-HC Suppositories and Anusol-HC Cream are contraindicated in those patients with a history of hypersensitivity to any of the components of the preparations.

**Warnings:** The safe use of topical steroids during pregnancy has not been fully established. Therefore, during pregnancy, they should not be used unnecessarily on extensive areas, in large amounts or for prolonged periods of time.

**Precautions:** General: Symptomatic relief should not delay definitive diagnoses or treatment.

Prolonged or excessive use of corticosteroids might produce systemic effects.

If irritation develops, Anusol-HC Suppositories and Anusol-HC Cream should be discontinued and appropriate therapy instituted.

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Anusol-HC is not for ophthalmic use.

**Pregnancy**

See "WARNINGS"

**Pediatric Use**

Care should be taken when using the corticosteroid hydrocortisone acetate in children and infants.

**Dosage and Administration:** Anusol-HC Suppositories—

Adults: Remove foil wrapper and insert suppository into the anus. Insert one suppository in the morning and one at bedtime for 3 to 6 days or until inflammation subsides. Then maintain comfort with regular Anusol Suppositories.

Anusol-HC Cream—Adults: After gentle bathing and drying of the anal area, remove tube cap and apply to the exterior surface and gently rub in. For internal use, attach the plastic applicator and insert into the anus by applying gentle continuous pressure. Then squeeze the tube to deliver medication. Cream should be applied 3 or 4 times a day for 3 to 6 days until inflammation subsides. Then maintain comfort with regular Anusol Ointment.

**NOTE:** If staining from either of the above products occurs, the stain may be removed from fabric by hand or machine washing with household detergent.

**How Supplied:** Anusol-HC Suppositories—boxes of 12

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in Newton. District 10 consists of Harvey, Marion, McPherson, Reno, and Rice counties.

Current problems of concern to physicians in District 10 include Medicaid reimbursement and the Advanced Registered Nurse Practitioner Act. Several physicians in smaller communities are also concerned about restrictions regarding the dispensing of drugs to their own patients.

It is evident that there will be an ample physician supply and a probable surplus of health care providers.

HERBERT FRANSEN, M.D., *Councilor*

**DISTRICT 11**

Lew W. Purinton, M.D. accepted the gavel as President of the Medical Society of Sedgwick County for 1980. Under his leadership, most of the goals and objectives of MSSC were achieved.

A major undertaking by the Society came to fruition in 1980. The MSSC Foundation for Medical Care completed negotiations with the Boeing Company, Blue Cross-Blue Shield, Aetna Insurance Company, and the four Wichita community hospitals for a medical care review project. All hospital admissions for Boeing employees and their dependents are being concurrently and retrospectively reviewed with the objective of providing medical care in the appropriate setting based on medical necessity as determined by the MSSC Foundation. This program was implemented in October 1980, and is functioning quite well. This is a major project involving a large number of society members. Ivan E. Rhodes, M.D. is president of the Foundation, and Norton Francis, M.D. is its medical director.

Another continuing effort in the area of cost containment was the second annual all-day meeting, sponsored by MSSC, of representatives of industry, labor, health care providers, and health insurance companies. The meeting was open to the media and served as an excellent public relations and educational forum for the participants.

Seventy-five thousand educational leaflets developed by the Society were distributed by physicians, clinics, and the Wichita hospitals. The leaflets explain to patients the reasons for increasing health care costs and how these costs can be contained.

The Legislative Committee, chaired by William Bruner, M.D., continued a very active role with the KMS Legislative Committee and with local legislators in presenting medicine's views on health care legislation.

The Society expanded its physician referral sys-



tem so that any patient who needs an appointment for non-emergency care will be provided one within 72 hours by calling MSSC.

The MSSC Board held a week long, short- and long-range planning meeting to define the objectives and to determine how to achieve the goals of the Society.

The Society continues to enjoy an excellent supportive relationship with the University of Kansas School of Medicine-Wichita. Twenty-five medical students were graduated from UKSM-Wichita in the 1980 class, while 50 new students began clinical training at the school in June 1980. William J. Reals, M.D. was named dean of UKSM-Wichita on July 1, 1980, succeeding Richard Walsh, M.D. who had accepted a position with the U.S. Public Health Service in Phoenix, Arizona. Dr. Reals is a former president of MSSC and KMS, and is a nationally and internationally known pathologist.

The Society was successful in preventing a proposed fragmentation of our fine city/county emergency medical service program which has been functioning since 1974.

At the annual MSSC Awards Dinner, George F. Gsell, M.D., William J. Reals, M.D., and William C. Swisher, M.D. were honored and presented special recognition awards for distinguished professional and community service.

Several local members of the Society continue to work very closely with the KMS Impaired Physician Program, supporting a number of colleagues participating in various phases of rehabilitation. As a member of this committee, I know that their efforts, although not generally known, are certainly appreciated.

Incoming president of MSSC for 1981 is Zane R. Boyd, M.D.

IVAN E. RHODES, M.D., *Councilor*

DISTRICT 12

District 12 has been progressive in providing good medical care and updating procedures and equipment.

We have enjoyed a good relationship with the Kansas Medical Society, meeting in February with the president, Phillip Godwin, and with Gary Caruthers at Kingman where issues of the medical community in the state were presented to the physicians.

The Pratt-Kingman Medical Society meetings have been well attended. The society is gaining three new member physicians from Stafford County. A

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new Pratt Regional Medical Center is in the process of completion.

We have had ongoing continuing education courses close to home at Harper. These are offered by UKSM-Wichita.

One of our physicians in Wellington cosponsored a bill to control drug paraphernalia. It has been passed by the House and, as of this writing, is being debated by the Senate Judiciary Committee.

Several District 12 area hospitals have come under the wings of hospitals in Wichita (Wesley and St. Joseph), and all concerned seem to be well pleased so far.

PHILIP J. ANTRIM, M.D., *Councilor*

### DISTRICT 13

Central Kansas Medical Society now includes 70 members. Officers for 1981 are Earl V. Carlson, M.D., Hays, President; Earl D. Merkel, M.D., Russell, Vice President; and Dallas Richards, M.D., Hays, Secretary-Treasurer. Joining our ranks this past year were Eric Dyck, M.D., Hays, family practice; Dan Eldredge, M.D., WaKeeney, general practice; Ron C. Martin, M.D., Hill City, general practice; Edward G. Mehrhof, M.D., Hays, psychiatry; Luecha Rutngamlug, M.D., Hays, general surgery; Ross Stadelman, M.D., Hays, general surgery; and Darrell Werth, M.D., Hays, urology. H. Alden Flanders, M.D., Hays, retired on January 1, 1981. We are saddened to report that Anna Wenzel, M.D., Hays, and William J. Madden, M.D., Lincoln, have been added to our list of deceased members.

Dr. Phillip Godwin took advantage of the mild Western Kansas weather to deliver his presidential address to our Society at the November meeting.

The credentialing process attracted some interest from the local physicians this past year. Continued attempts to make inroads into the practice of medicine by "me too" groups, such as the latest nurse practitioner program, are being seen. Standards of medical care are still in the hands of the medical profession at the local level. To abdicate the responsibility of credentialing at the hospital staff level will allow carte blanche rights and restrictions to be dictated by state of federal bureaucracies. "He (she) who has eyes, let them see!"

WALLACE N. WEBER, M.D., *Councilor*

### DISTRICT 14

On September 3, Dr. Phillip Godwin, President of Kansas Medical Society, met with us and discussed

issues of concern to physicians. Plans were made for political action in preparation for the November elections. Physicians were urged to vigorously support the candidates of their choice. There was particular interest in the race for the State Senate.

Members were urged to correspond with their legislators in Topeka, and it was suggested that they request the legislative bulletin from the KMS office. The subspecialty societies were asked to submit suggestions for legislation. Plans for State Meeting were discussed.

DONALD E. BEAHM, M.D., *Councilor*

### DISTRICT 16

Northwest Kansas Medical Society records a gain for the year with the addition of two new physicians to the area: Marguerite Palmer, M.D., Oberlin, and Ron Martin, M.D., Hill City. Victor Hilyard, Sr., M.D., Colby, has retired and moved out of state.

Our Society meetings continue to be held in conjunction with the UKSM circuit courses which allows for less travel and better attendance at both functions. We welcomed our KMS president, Dr. Phillip Godwin, at the October meeting and are very grateful to him for making the long trip here and bringing us up to date on medicine in Kansas. Physicians of this district continue to be active in the UKSM Preceptorship program as well as active members on the Board of Directors for Blue Cross and Blue shield. This year we are especially proud of our member physician Herman Heisterman, M.D., Quinter, who is presently the President-Elect of the Kansas Medical Society.

JOHN R. NEUENSCHWANDER, M.D., *Councilor*

### DISTRICT 17

The Southwest Kansas Medical Society held three meetings during 1980. In March, the president of the Kansas Medical Society, Dr. Donald Goering, and Mrs. Goering were guests. The Ford County Medical Society joined us for our meeting in October to hear and visit with Pat Roberts, candidate for the House of Representatives from the big First Congressional District.

Officers for 1981 are Frank Eichhorn, M.D., president; John Gilbert, M.D., vice president; and Luther Fry, M.D., secretary-treasurer.

Our area gained five new physicians this past year! John Shuss, M.D., general surgeon, became associated with Calvin Bigler, M.D. in August; and

# The Kansas Medical Society — 1980-1981

## OFFICERS

President	Philip A. Godwin, Lawrence
Immediate Past President	Donald D. Goering, Coldwater
President-Elect	Herman W. Hiesterman, Quinter
First Vice President	Kermit G. Wedel, Minneapolis
Second Vice President	Jimmie A. Gleason, Topeka
Secretary	Jack R. Cooper, Shawnee Mission
Treasurer	William K. Walker, Sedan
A.M.A. Delegate	Clair C. Conard, Dodge City
A.M.A. Delegate	Alex Scott, Junction City
A.M.A. Alternate	Lew W. Purinton, Wichita
A.M.A. Alternate	Kermit G. Wedel, Minneapolis
Chairman of Editorial Board	David E. Gray, Topeka

## COUNCILORS

District 1	Roger D. Warren, Hanover
District 2	Louis M. Culp, Kansas City
District 3	James G. Bridgens, Shawnee Mission
District 4	Rodney Odgers, Pittsburg
District 5	Kenneth M. Boese, Manhattan
District 6	James H. Ransom, Topeka
District 7	Marvin Snowbarger, Emporia
District 8	Stephen J. Smith, Arkansas City
District 9	Herbert D. Doubek, Belleville
District 10	Herbert Fransen, Newton
District 11	Ivan E. Rhodes, Wichita
District 12	Philip J. Antrim, Anthony
District 13	Wallace N. Weber, Hays
District 14	Donald E. Beahm, Great Bend
District 15	Richard L. Brownrigg, Dodge City
District 16	John Neuenschwander, Hoxie
District 17	Max E. Teare, Garden City
District 18	Robert W. Hughes, Lawrence
District 19	Robert F. Moore, Caney

## OFFICERS OF COMPONENT SOCIETIES — 1981

<i>Society</i>	<i>President</i>	<i>Secretary</i>
Allen	George F. DeTar, Iola	Eugene Myers, Iola
Anderson	Thomas M. Dougherty, Garnett	C. B. Harris, Garnett
Atchison	Robert O. Brown, Atchison	Arkorn Tivorsak, Atchison
Barton	Robert Polson, Great Bend	Perry Schuetz, Great Bend
Bourbon	Charles S. Reeves, Fort Scott	T. Eugene Nelson, Fort Scott
Butler-Greenwood	K. L. Jacob, El Dorado	Y. U. Lee, El Dorado
Central Kansas	Earl V. Carlson, Hays	Dallas L. Richards, Hays
Cherokee	R. M. Chubb, Baxter Springs	Orville A. Mehaffy, Baxter Springs
Clay	Dennis Richards, Clay Center	Richard H. O'Donnell, Clay Center
Cloud	Avis P. Bray, Concordia	Muhammad M. Butt, Concordia
Cowley	Anand N. Kaul, Winfield	Sigurd S. Daehnke, Winfield
Crawford	Wilson F. Rigler, Arma	F. A. Tweet, Pittsburg
Dickinson	Gary Coleman, Abilene	C. R. Svoboda, Chapman
Douglas	George R. Learned, Lawrence	Martin Wollmann, Lawrence
Edwards	W. L. McKim, Kinsley	M. D. Atwood, Kinsley
Flint Hills	W. Scott Ryan, Emporia	David Edwards, Emporia
Ford	Mohammad S. Amawi, Dodge City	Jose J. Mimoso, Dodge City
Franklin	Chester H. Strehlow, Ottawa	Jim D. Blankenship, Ottawa
Geary	Gary A. Copeland, Junction City	Alex Scott, Junction City
Harvey	J. Wendell Wiens, Newton	Colin Bailey, Halstead
Iroquois	G. Andrew McNickle, Ashland	Roger C. Trotter, Minneola
Jackson	J. C. Seeley, Holton	M. R. Moser, Holton
Jefferson	R. R. Snook, McLouth	R. C. Keys, Sr., Winchester
Johnson	F. E. Snodell, Shawnee Mission	Charles E. Bare II, Shawnee Mission
Labette	Daniel N. Pauls, Parsons	Stephen F. Miller, Parsons
Leavenworth	Donald L. Snow, Lansing	Terry H. Johler, Leavenworth
McPherson	J. Richard Johnson, McPherson	Gregory M. Thomas, McPherson
Marion	James Canellos, Goessel	G. George Ens, Hillsboro
Miami	R. E. Banks, Paola	J. G. Rowlett, Paola
Mitchell	Martin B. Klenda, Beloit	Carl W. Plowman, Jewell
Northeast Kansas	David Hodgson, Washington	Norman W. Berkley, Seneca
Northwest Kansas	Victor H. Hilyard, II, Colby	George D. Marshall, Colby
Pawnee	Ole R. Cram, Larned	Thomas D. Ewing, Larned
Pottawatomie	Tom Dechairo, Westmoreland	Tom Walsh, Onaga
Pratt-Kingman	J. Warren Jacks, Pratt	Carl Ambler, Pratt
Reno	Francis L. Depenbusch, Hutchinson	Marcus W. Adams, Hutchinson
Republic	Duane L. Scott, Belleville	James A. Ward, Belleville
Rice	Tom C. Simpson, Sterling	Richard A. Siemens, Lyons
Riley	Robert H. Cathey, Manhattan	Graham C. Rose, Manhattan
Saline	Clarence N. Waters, Salina	Kenneth D. Wedel, Minneapolis
Sedgwick	Lew W. Purinton, Wichita	Ronald V. Erken, Wichita
Seward	Edwin D. Rathbun, Liberal	Carmelita D. Caedo, Liberal
Shawnee	Stuart C. Averill, Topeka	Douglas Sheafor, Topeka
South Central Tri-County	Larry R. Anderson, Wellington	Jerry Hall, Anthony
Southeast Kansas	Bob Haskins, Chanute	Masood A. Sheikh, Independence
Southwest Kansas	Frank Eichhorn, Garden City	Luther Fry, Garden City
Wyandotte	Robert P. McCarthy, Kansas City	Frederic M. Gilhousen, Kansas City



Patrick Donnelly, M.D. joined the Plaza Medical Group in family practice in December. Bill Strawter, M.D., surgeon, established practice in Scott City; Louise Tuttle, D.O. came to work with Dr. Willard Werner in Tribune; and in Garden City, Regional Radiology Services welcomed Efraim Coronado, M.D. Zeferino Arroyo, M.D., general surgeon, moved from Scott City to Garden City, and is associated with the Garden Medical Clinic.

Southwest Kansas continues to grow in industry, population, and opportunity.

MAX E. TEARE, *Councilor*

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### DISTRICT 18

Two new physicians — Dr. Jim Blankenship and Dr. Scott Corder — have moved into Ottawa and set up practice during the past year. The Ottawa Hospital has added its own sonogram and now has those capabilities. The county also has added pulmonary and dermatology consulting clinics to their medical service programs. The local medical auxiliary kindly raised funds and purchased some new nursery equipment for the Ottawa Hospital.

In Lawrence, the Douglas County Medical Society was quite pleased that one of its members, Dr. Phillip Godwin, was elected to the presidency of the Kansas Medical Society. Three new physicians — Dr. Joan K. Brunfeldt, Dr. Joseph Douglas, and Dr. Mary Vernon — have established practices in Lawrence.

Lawrence Memorial Hospital celebrated its 100th

birthday and held an all-day open house and a large birthday party. Every person who had been born there received a special invitation to attend. The Hospital added a new gamma camera with cardiac capabilities to its x-ray department and is now performing those scans. Finally, the Lawrence Memorial Hospital has undertaken the vast job of completely rewriting all of the bylaws — hopefully, to everyone's satisfaction.

Overall, the district has run a very benign and pleasant course.

R. W. HUGHES, M.D., *Councilor*

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### DISTRICT 19

The Southeast Kansas Medical Society has had very active meetings for the past year. Good attendance has been partially attributed to the excellent programs provided by the University of Kansas Medical Center under the direction and guidance of Dr. Bill Emmot of Independence.

One of the highlights of the spring was Dr. Phillip Godwin's visit in January.

The Auxiliary has been quite active. The Auxiliary meets monthly in conjunction with the Southeast Kansas Society meetings and its membership is steadily growing as well.

It has been my pleasure to serve as Councilor for this fledgling new district these past few years but I will be happy to turn the reins over to a successor in May.

R. F. MOORE, M.D., *Councilor*

**Letters to VOX DOX should be addressed to the Vox Dox Editor, Journal of the Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612.**



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and 2.5 mg clidinium Br

**antianxiety/antisecretory/antispasmodic**  
for adjunctive therapy of duodenal ulcer\*  
and irritable bowel syndrome\*

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Final classification of the less-than-effective indications requires further investigation.

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**Warnings:** Caution patients about possible combined effects with alcohol and other CNS depressants, and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Physical and psychological dependence rarely reported on recommended doses, but use caution in administering Librium<sup>®</sup> (chlordiazepoxide HCl/Roche) to known addic-

tion-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions) reported following discontinuation of the drug.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy. Advise patients to discuss therapy if they intend to or do become pregnant.

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**Precautions:** In elderly and debilitated, limit dosage to smallest effective amount to preclude ataxia, oversedation, confusion (no more than 2 capsules/day initially; increase gradually as needed and tolerated). Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider pharmacology of agents, particularly potentiating drugs such as MAO inhibitors, phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions reported in psychiatric patients. Employ usual precautions in treating anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation reported very rarely in patients receiving the drug

and oral anticoagulants; causal relationship not established.

**Adverse Reactions:** No side effects or manifestations not seen with either compound alone reported with Librax. When chlordiazepoxide HCl is used alone, drowsiness, ataxia, confusion may occur, especially in elderly and debilitated; avoidable in most cases by proper dosage adjustment, but also occasionally observed at lower dosage ranges. Syncope reported in a few instances. Also encountered: isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent, generally controlled with dosage reduction; changes in EEG patterns may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice, hepatic dysfunction reported occasionally with chlordiazepoxide HCl, making periodic blood counts and liver function tests advisable during protracted therapy. Adverse effects reported with Librax typical of anticholinergic agents, i.e., dryness of mouth, blurring of vision, urinary hesitancy, constipation. Constipation has occurred most often when Librax therapy is combined with other spasmolytics and/or low residue diets.

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# Resolutions

*To Be Introduced at First House of Delegates, May 8, 1981*

## REFERENCE COMMITTEE

Rex R. Fischer, M.D., Manhattan, *Chairman*  
Robert H. Haskins, M.D., Chanute  
Frank G. Bichlmeier, M.D., Kansas City  
Ernest L. McClellan, M.D., Wichita  
Donald E. Beahm, M.D., Great Bend

*An asterisk following the resolution number indicates those resolutions require a change in the Constitution and By-Laws, and a two-thirds majority vote of the House of Delegates is needed.*

## RESOLUTION NO. 81-1

*(Submitted by Johnson County Medical Society)*

### Impaired Physicians

1 WHEREAS, The Johnson County Medical  
2 Society has recognized the need for and has  
3 supported fully the Impaired Physicians Pro-  
4 gram of the Kansas Medical Society; and  
5 WHEREAS, A physician may have sustained  
6 an extreme financial burden as a result of his  
7 impairment; and  
8 WHEREAS, This financial burden may com-  
9 pound a delay in a physician seeking appropri-  
10 ate help; and  
11 WHEREAS, A primary purpose of county and  
12 state medical societies is to be responsive to  
13 physicians' needs; therefore be it  
14 *Resolved*, That the Kansas Medical Society  
15 establish a fund for impaired physicians, that  
16 this fund be established and maintained by a  
17 one dollar (\$1.00) assessment to each member  
18 of the Kansas Medical Society, and that a  
19 Physicians Loan Committee be appointed to  
20 administer loans and/or grants to physicians  
21 who recognize their impairment; and be it  
22 further  
23 *Resolved*, That the members of the  
24 aforementioned committee will honor the prin-  
25 ciples of personal and professional confiden-  
26 tiality in their deliberation.

## RESOLUTION NO. 81-2\*

*(Submitted by the Executive Committee)*

### Delinquent Dues

1 WHEREAS, Section 11.931 of the bylaws pro-  
2 vides that "a member must pay dues for the one  
3 year in which he/she became delinquent,  
4 should he/she desire to renew his/her mem-  
5 bership in the future, unless he/she submits  
6 his/her letter of resignation to the Society by  
7 January 31 of that dues-paying year"; and  
8 WHEREAS, There is increasing resistance on  
9 the part of potential members to pay dues for  
10 the delinquent year; therefore be it  
11 *Resolved*, That a new section 11.931 be  
12 adopted stating: "The Executive Committee  
13 shall be empowered to consider on an indi-  
14 vidual basis whether a member must pay dues  
15 for the one year in which he/she became delin-  
16 quent should he/she desire to renew his/her  
17 active membership in the future."

## RESOLUTION NO. 81-3\*

*(Submitted by the Executive Committee)*

### Medical Student and Resident Membership

1 WHEREAS, The Kansas Medical Society is  
2 interested in increasing medical student and  
3 resident membership; and  
4 WHEREAS, The component medical society  
5 should be the entry point for new members; and  
6 WHEREAS, The current bylaws provisions  
7 appear to be inconsistent for student and resi-  
8 dent members; therefore be it  
9 *Resolved*, That the bylaws be amended to  
10 reflect the following policy changes:  
11 1. Eliminate the Medical Student Soci-  
12 ety and encourage membership through  
13 the component medical society.  
14 2. Students shall pay no KMS dues.  
15 They may receive the *Journal* for one-half  
16 of the subscription price.  
17 3. Residents shall pay \$10 KMS dues.  
18 The *Journal* subscription shall be included  
19 as a part of the dues.



20 And be it further  
 21 *Resolved*, That the KMS and the component  
 22 medical societies formulate a plan to actively  
 23 seek new student and resident membership.

### RESOLUTION NO. 81-4

*(Submitted by Johnson County Medical Society)*

#### KU Medical Center

1 WHEREAS, The members of the Johnson  
 2 County Medical Society were recently in-  
 3 formed of the financial difficulties at the Kan-  
 4 sas University Medical Center in Kansas City,  
 5 Kansas, by the Vice Chancellor of the School  
 6 of Health Sciences; and

7 WHEREAS, This problem has resulted from  
 8 declining bed occupancy due to decreased re-  
 9 ferrals to the Medical Center from the many  
 10 physicians they have already trained; and

11 WHEREAS, A state-sponsored scholarship  
 12 program provides that 85 per cent of the 200  
 13 new physicians in training will likely remain  
 14 within the state to practice; and

15 WHEREAS, This will result in a projected  
 16 oversupply of health care providers within a  
 17 few short years; and

18 WHEREAS, The size of the medical education  
 19 program has been the prerogative of the State  
 20 Legislature; and

21 WHEREAS, The U.S. Department of Health  
 22 and Human Services has projected a significant  
 23 oversupply of physicians by 1990; and

24 WHEREAS, A significant portion of the cost  
 25 of each physician is borne by state money;  
 26 therefore be it

27 *Resolved*, That the Kansas Medical Society  
 28 petition the Kansas Legislature to appoint a  
 29 committee to study projected medical care  
 30 needs of the state so that appropriate changes in  
 31 the size of a medical school class can be  
 32 effected.

### RESOLUTION NO. 81-5

*(Submitted by the Long Term Care Committee)*

#### Gerontology Professorship at the University of Kansas School of Medicine

1 WHEREAS, The percentage of people of Kan-  
 2 sas over the age of 65 years has increased signi-  
 3 ficantly; and

4 WHEREAS, The health care needs of persons  
 5 over the age of 65 often differ significantly  
 6 from those of the general population; therefore  
 7 be it

8 *Resolved*, That the Kansas Medical Society  
 9 go on record favoring the establishment and  
 10 funding of a Gerontology Professorship at the  
 11 University of Kansas School of Medicine; and  
 12 be it further

13 *Resolved*, That a copy of this resolution be  
 14 forwarded to the Governor, members of the  
 15 Legislature, and the Executive Vice Chancellor  
 16 for the University of Kansas School of Medi-  
 17 cine and College of Health Sciences.

### RESOLUTION NO. 81-6

*(Submitted by the School Health Committee)*

#### Standard Immunization Record Form

1 *Resolved*; That the Kansas State Department  
 2 of Health and Environment be encouraged to  
 3 adopt the Standard Immunization Record  
 4 Workshop as the official immunization form of  
 5 Kansas.

### RESOLUTION NO. 81-7

*(Submitted by the Health Resources Committee)*

#### Physician's Assistants Training

1 WHEREAS, The Physician's Assistant train-  
 2 ing program at Wichita State University was  
 3 developed to assist in providing manpower for  
 4 physician shortage areas; and

5 WHEREAS, The physician shortage situation  
 6 is projected to be alleviated in the near future  
 7 based on the GMENAC report on the fulfill-  
 8 ment of commitments by medical students cur-  
 9 rently participating in the Kansas Medical  
 10 Scholarship Program; therefore be it

11 *Resolved*, That a study be conducted by the  
 12 Legislature to determine the need to continue  
 13 the Physician's Assistant Training program at  
 14 Wichita State University.

### RESOLUTION NO. 81-8

*(Submitted by the Health Resources Committee)*

#### Nursing Education

1 WHEREAS, The Kansas Medical Society sup-

ports all forms of nursing education including baccalaureate, diploma, and associate degree programs; and

WHEREAS, There is a critical shortage of nurses currently available to provide direct patient care in hospitals and medical office settings; therefore be it

*Resolved*, That the Kansas Medical Society favor increased development of associate degree and diploma school nursing programs to provide more nurses for direct patient care in hospitals and medical offices; and be it further

*Resolved*, That a copy of this resolution be forwarded to the Governor, members of the Kansas Legislature, the Kansas State Board of Nursing, and the Kansas State Nurses Association.

### RESOLUTION NO. 81-9

*(Submitted by the Legislative Committee)*

#### Advanced Registered Nurse Practitioner Regulations

WHEREAS, The permanent Advanced Registered Nurse Practitioner regulations have taken effect in spite of the continued opposition of the KMS; and

WHEREAS, These ARNP regulations are ambiguous, vague, and a blur of the distinction between physician and nurse; and

WHEREAS, The KMS believes the ARNP regulations go far beyond what the Legislature originally intended for the expanded role nurse; therefore be it

*Resolved*, That the KMS Executive Committee be directed to take appropriate legal action to prevent implementation of the permanent ARNP regulations.

### RESOLUTION NO. 81-10

*(Submitted by the Health Resources Committee)*

#### Health Planning — KMS Active Involvement

WHEREAS, The Kansas Department of Health and Environment and the Health Systems Agencies are developing statistics on health manpower to be utilized in facility and training program planning; and

WHEREAS, The Kansas Medical Society does not have an adequate mechanism for monitoring and verifying these various statistics; therefore be it

*Resolved*, That the Executive Committee be directed to study the development of an aggressive, workable system for the active monitoring of the health planning system, including additional funding and staff, if necessary; and be it further

*Resolved*, That the resulting proposal be referred to the Council for appropriate action.

### RESOLUTION NO. 81-11

*(Submitted by Johnson County Medical Society)*

#### Kansas University Medical Center

WHEREAS, The financial plight of the University of Kansas Medical Center was recently revealed to the Johnson County Medical Society; and

WHEREAS, Many of these problems stem from overconstruction, underoccupancy, overstaffing, and apparent inefficient utilization of personnel; and

WHEREAS, The medical profession is deeply concerned over the near and long-term future of this essential medical facility; therefore be it

*Resolved*, That the Kansas Medical Society petition the Kansas Legislature to appoint a committee of interested and knowledgeable physicians, hospital administrators, and other individuals of related backgrounds to investigate and review the organization and operation of the Medical Center; and be it further

*Resolved*, That a report of their findings and recommendations be submitted to appropriate legislative committees.

### RESOLUTION NO. 81-12

*(Submitted by the Maternal Health Committee)*

#### Home Deliveries

*Resolved*, That the Kansas Medical Society endorses the American College of Obstetrics and Gynecologists' statement on home deliveries as follows:

Labor and delivery, while a physiologic process, clearly present potential hazards to both mother and fetus before and after birth. These hazards require standards of safety which are provided in the hospital setting and cannot be matched in the home situation.

We recognize, however, the legitimacy



14 of the concern of many that the events sur-  
 15 rounding birth be an emotionally satis-  
 16 fying experience for the family. The Col-  
 17 lege supports those actions that improve  
 18 the experience of the family while con-  
 19 tinuing to provide the mother and her in-  
 20 fant with accepted standards of safety  
 21 available only in the hospital.

### RESOLUTION NO. 81-13

*(Submitted by the Maternal Health Committee)*

#### Responsibilities of the Health Team in Maternity Care

1 *Resolved*, That the Kansas Medical Society  
 2 adopt the following policy statement on the  
 3 responsibilities of the health team in maternity  
 4 care:

5 The Kansas Medical Society reaffirms  
 6 its policy that the health team necessary to  
 7 provide optimal maternity care must be  
 8 directed by a qualified physician. Fully  
 9 recognized in this policy is the role of the  
 10 certified nurse-midwife who, as a member  
 11 of this team, may assume responsibility  
 12 for the complete management of the un-  
 13 complicated pregnant woman. While rec-  
 14 ognizing the role of the certified nurse-  
 15 midwife as a member of this team, there  
 16 appears to be no pressing need for certified  
 17 nurse-midwives in Kansas at this time.

18 The KMS supports the worldwide stan-  
 19 dards endorsed by the World Health Orga-  
 20 nization concerning the education of mid-  
 21 wives. Midwives should have a minimum  
 22 of three years of formal training, including  
 23 at least one year of nursing. For those  
 24 midwives who have already completed  
 25 nursing education, two years of midwifery  
 26 education is the minimum requirement.  
 27 (In the United States, some nurse-mid-  
 28 wifery programs conducted by accredited  
 29 institutions of higher learning are less than  
 30 two years in duration.) The certified  
 31 nurse-midwife meets these standards.  
 32 Lower standards are unacceptable for the  
 33 care of women in the United States.

34 The KMS supports actions and pro-  
 35 grams that encourage family-centered  
 36 maternity care while continuing to provide  
 37 the mother and her infant with the  
 38 accepted standards of safety available only  
 39 in a hospital setting.

40 The KMS supports regional planning  
 41 that provides for easy access to quality  
 42 care at the primary level and the availabil-  
 43 ity of more specialized care at regional  
 44 centers when necessary. This planning  
 45 should provide continuity of care for the  
 46 individual woman throughout pregnancy  
 47 and the interconceptional period.

48 The KMS supports the right of the preg-  
 49 nant woman to informed consent recog-  
 50 nizing that at the same time the woman  
 51 assumes responsibility for decisions that  
 52 she makes in the interest of her own health  
 53 and the health and welfare of her infant.  
 54 Government and its agencies have a re-  
 55 sponsibility to insure that inadequately  
 56 trained personnel and unsafe facilities are  
 57 not approved.

## CHANGE OF ADDRESS

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 Kansas Medical Society  
 of any changes in address

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When exposure to rabies is suspected, Hyperab® Rabies Immune Globulin (Human) is the product of choice.

**Hyperab® is recommended by the U.S. Public Health Service and the American College of Surgeons.**

Antirabies serum of equine origin produces serum sickness in approximately 40% of adults and 15% of children. Anaphylactic shock may occur.

Hyperab®, the only rabies immune globulin of human origin virtually eliminates these hazards. No serious side effects have been reported with its use.

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Rabies Immune  
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**Cutter Biological**

Division of Cutter Laboratories, Inc.  
Berkeley, California 94710

See next page for brief summary of  
prescribing information



# Hyperab<sup>®</sup> RABIES IMMUNE GLOBULIN (HUMAN)

## DESCRIPTION

Rabies Immune Globulin (Human)—Hyperab<sup>®</sup> is a sterile solution of antirabies gamma globulin (IgG) concentrated by cold alcohol fractionation from plasma of donors hyperimmunized with rabies vaccine. Hyperab<sup>®</sup> globulin is a 16.5%  $\pm$  1.5 solution of gamma globulin from venous blood in 0.3M glycine, preserved with 1:10,000 Thimerosal (a mercury derivative). Its pH is adjusted with sodium carbonate. The product is standardized against USA Standard Antirabies Serum. The USA unit of potency is equivalent to the International Unit (IU) for rabies antibody.

This product is prepared from human venous plasma. Each individual unit of plasma has been found nonreactive for hepatitis B surface antigen using the radioimmunoassay method of counter-electrophoresis.

## INDICATIONS

Treatment of rabies, once clinical disease becomes apparent, is rarely if ever successful. Rabies vaccine (duck-embryo origin, Lilly Laboratories) with or without Rabies Immune Globulin (Human)—Hyperab<sup>®</sup> should, therefore be given to all persons suspected of exposure to rabies, particularly to severe exposure. Whenever possible, Hyperab<sup>®</sup> globulin should be injected as promptly as possible after exposure. If initiation of treatment is delayed for any reason, however, Rabies Immune Globulin (Human) should be given just the same, regardless of the interval between exposure and treatment.

Rabies virus is usually transmitted by the bite of a rabid animal, but can occasionally penetrate abraded skin with the saliva of infected animals. Progress of the virus after exposure is believed to follow a neural pathway, and the time between exposure and clinical rabies is a function of the proximity of the bite (or abrasion) to the central nervous system and the dose of virus injected. The incubation is usually 2 to 6 weeks, but can be longer. After severe bites about the head and neck, it may be as short as 10 days.

After initiation of the vaccine series, it takes 2 weeks or longer for development of immunity to rabies. Since most vaccine failures have occurred in cases of severe exposure, the value of immediate immunization with preformed rabies antibody cannot be over-emphasized.

Recommendations for use of passive and/or active immunization after exposure to an animal suspected of having rabies were detailed by WHO, and by the US Public Health Service Advisory Committee on Immunization Practices (ACIP).

## INJECTION PROCEDURE

A portion of the Hyperab<sup>®</sup> globulin dose should be used to infiltrate the wound. The rest is injected intramuscularly.

## CONTRAINDICATIONS

Rabies Immune Globulin (Human)—Hyperab<sup>®</sup> is contraindicated in repeated doses, once vaccine treatment has been initiated. Repeating the dose may bring about interference with full expression of active immunity expected from the vaccine. Hyperab<sup>®</sup> globulin is also contraindicated in individuals who are known to have an allergic response to gamma globulin or thimerosal.

## PRECAUTIONS

NEVER ADMINISTER Hyperab<sup>®</sup> globulin INTRAVENOUSLY

## ADVERSE REACTIONS

Slight soreness at the site of injection, and slight temperature elevation, may be noted at times. Sensitization to repeated injections of human globulin is extremely rare.

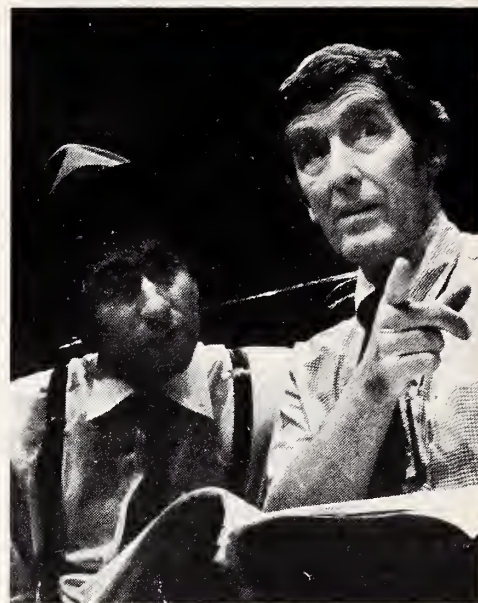
In the course of routine injections of a large number of persons with human gamma globulin, there have been a few isolated occurrences of angioneurotic edema, nephrotic syndrome, and anaphylactic shock after injection. Because of their rarity, it is difficult to determine whether such reactions are incidental, or causally related to the gamma globulin.

No instances of transmission of hepatitis B (homologous serum jaundice) have been reported from the use of human gamma globulin prepared by the fractionation methods employed by Cutter Laboratories, Inc.

## HOW SUPPLIED

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# WHY I'M A UNITED WAY VOLUNTEER



## GREGORY FALLS

**Home:** Seattle, Washington

**Career:** Artistic Director

**Age:** 57

**Married:** Four children

**Interests:** Drama, writing, travel and volunteering for United Way

"Getting involved is more than signing a pledge card once a year. It means giving some time.

"Between my job and my family, I don't have much time to give. But I do know the hours I devote to United Way make a difference. A real difference.

"That's because United Way is an organization that works. It's made up of all kinds of people—volunteers—working hard and making tough decisions to meet the community's human care needs.

"More than anything, United Way takes me out of the make-believe world I work in, into the drama of human life.

"Volunteering for United Way is more than what I ask of myself, it's what I owe myself . . . and my community."



Thanks to you...  
it works...

for ALL OF US **United Way**



A Public Service of This Magazine & The Advertising Council

# Council Meeting

The Council convened on Sunday, March 1, 1981, at the Hilton Inn, Junction City, beginning at 10:15 A.M. Those present were Drs. Phillip A. Godwin, President, Lawrence; Philip J. Antrim, Anthony; Donald E. Beahm, Great Bend; John N. Blank, Hutchinson; Kenneth M. Boese, Manhattan; James G. Bridgens, Shawnee Mission; Dean T. Collins, Topeka; Clair C. Conard, Dodge City; Jack R. Cooper, Shawnee Mission; Louis M. Culp, Kansas City; Rex R. Fischer, Manhattan; Herbert Fransen, Newton; Jimmie A. Gleason, Topeka; Donald D. Goering, Coldwater; Herman W. Hiesterman, Quinter; Robert W. Hughes, Lawrence; Edward L. Jones, Great Bend; Alex Scott, Junction City; Max E. Teare, Garden City; Wayne O. Wallace, Jr., Atchison; Roger D. Warren, Hanover; Wallace N. Weber, Hays; Kermit G. Wedel, Minneapolis; and Emerson D. Yoder, Denton. Also present was Joseph G. Hollowell, M.D., Director of Health, Kansas Department of Health and Environment. Also present was Mrs. John D. Huff, President, KMS Auxiliary. Also present were Messrs. Gary Caruthers and Jerry Slaughter and Mrs. Val Braun.

## Report of Meeting Held March 1, 1981

The following actions of the Executive Committee were approved:

**Building and Investments Fund.** Recommend payment from fund for the following items in addition to the capital improvements and repairs: utilities, custodial services, janitorial supplies, insurance, taxes, lawn care.

**Membership Plaque.** Approved printing of brochure to be distributed with dues statements to determine membership interest through orders received.

**Grant Request.** Upon review of the CME Committee recommendation, denied the grant request by Dr. Tinterow.

**Wyandotte County Paging System Suit.** Approved dismissal.

**KaMPAC.** Approved \$3,000 contribution to the Educational Fund.

**Banking Services.** Appointed Drs. Gleason, Walker, Wedel, and Hiesterman to study consolidation of all KMS accounts for investment purposes, with identification of accounts through line item budget.

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*Medical Student Membership.* Approved introduction of resolution to increase membership in this category.

*Building Improvement.* Approved purchase of a new water cooler, \$400-\$600.

*ARNP Regs.* Authorized the President to take legal action if necessary to prohibit ARNP regulations from taking effect.

*KaMPAC* board vacancies to be submitted to component medical societies for nominations.

Dr. Godwin read a resolution commemorating Dr. Lucien R. Pyle's 50 years of service to the people of Kansas and to organized medicine. The resolution was enthusiastically adopted. (See the March 1981 issue, page 81.)

The following nominations to the Blue Cross Board were received: Drs. Erwin T. Olson, Newton; William C. Loewen, Wichita; E. Stanley Kardatzke, Wichita; Robert Enberg, Hays; and Ted M. Gardner, Garden City. The Medical Society of Sedgwick County will be contacted for further suggestions.

Mr. Slaughter presented a legislative update report as follows:

*ARNP Regs.* KMS has petitioned the Legislature to modify the regulations as written. The Senate Public Health and Welfare committee voted against the resolution; this action allows the permanent regulations to take effect May 1. KMS wanted to delete such terms as "interdependent role" and "medical regimen."

*Physician Immunity, SB 146.* Prospects for passage are slim.

*Peer Review, SB 214.* This bill is in the Senate Judiciary Committee. KMS needs to reach a compromise on proposed language with the trial lawyers.

*Child Safety Protection Act, HB 2208.* This bill may pass with extensive amendments. The statute would be primarily educational in nature.

*Dispensing Physicians, SB 394.* An Attorney General's opinion indicated that physicians could not delegate to their nurses the dispensing of drugs in their offices. Legislation is desired to clear up the AG's ruling. The Pharmacy Association is expected to oppose the bill.

*Hospital Cost Containment, SB 261.* This bill is similar to the one introduced last session. The bill probably will not be heard this year.

*Medicaid.* Reduction of federal moneys will require either increased state funding, reduced benefits, or a necessity for providers to underwrite larger portions of the expense. Mr. Slaughter reviewed a listing of procedures and proposed fee increases. These increases have not been approved by the

Legislature as of this time.

Dr. Wayne O. Wallace discussed the Kansas drug review action plan for controlling diversion of controlled substances and identifying problems relating to prescription drug usage by providers. It is very difficult under the present system to deal with providers who appear to have prescription problems. The plan proposes a physician confronter panel who would identify problem physicians. A confronter would then communicate with the physician about the problem in an attempt to resolve the existing problem informally. It appears that local society grievance committees in many areas cannot adequately deal with this problem. Following discussion, Dr. Hughes moved to establish a committee to study an appropriate interface of this proposal with the Impaired Physician Program and the Judicial Committee. This was duly seconded and approved. It was suggested that the term "confronter" be changed to evoke a more descriptive implication.

The Council took the following actions:

- Increased automobile allowance;
- approved a change in the beginning of the vesting period in the employee pension plan to coincide with the date of employment for those employees who were employed at the time plan was implemented;
- approved the new charge policy for state meeting reservations whereby pre-registrations postmarked by April 23 would receive a special price discount; those purchased after that date would be priced higher;
- elected not to join the Legislative Coalition;
- voted to allow the Stafford County Medical Society to disband, with local members to associate with neighboring component medical societies of choice;
- approved inviting Blue Shield to make a cost containment presentation during the luncheon on Saturday, May 9, 1981, at the Annual Meeting;
- approved Dr. Yoder's request to write a letter to the AMPAC Board, endorsing the candidacy of John Martin, M.D., of Missouri, for a position on the board.

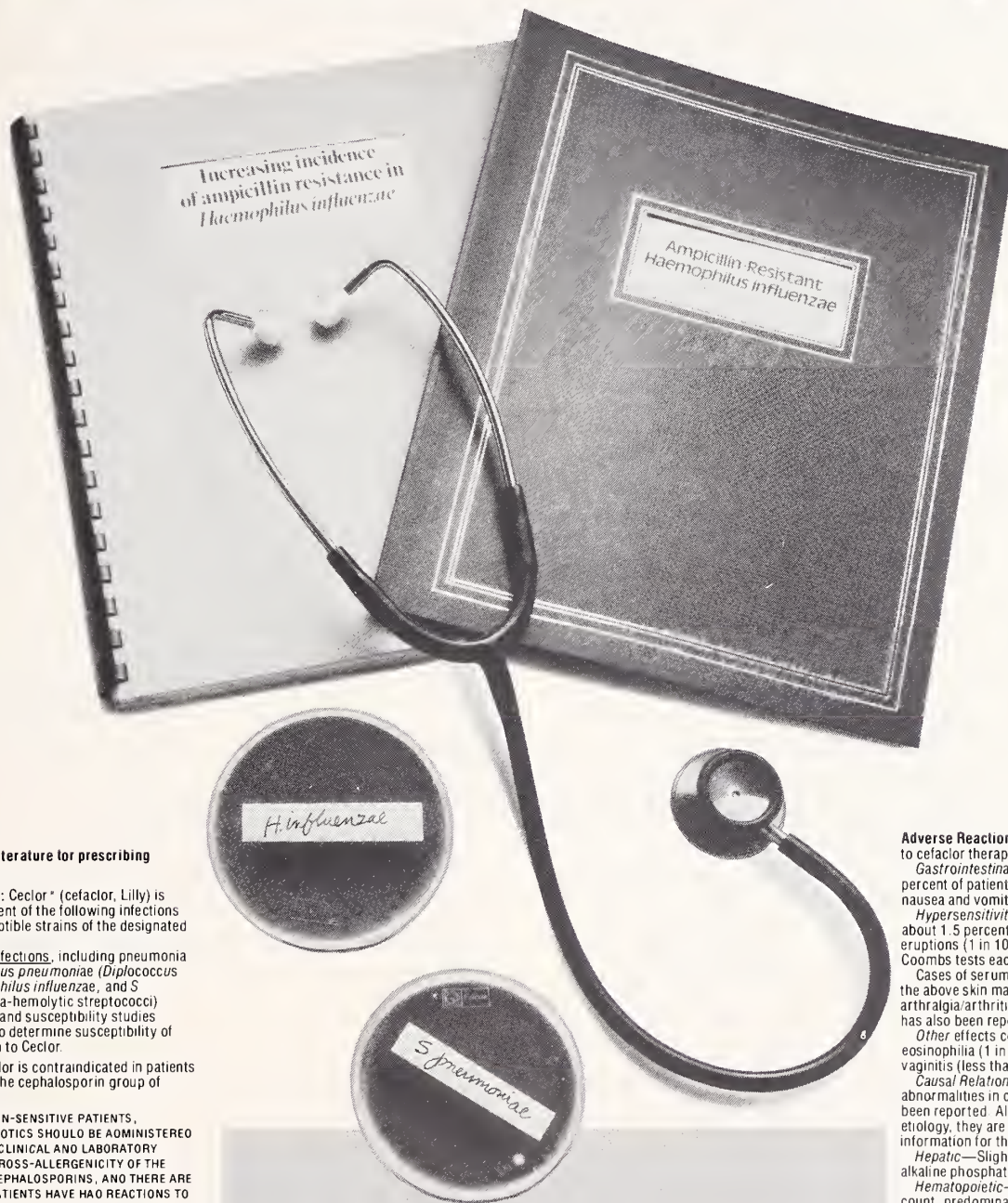
The Council heard the following reports which were filed for information:

- Judicial Committee
- I. C. Systems
- Nominating Committee
- Litigation involving KMS
- Annual dues

The Council adjourned for lunch at 12:45 P.M.



# An added complication... in the treatment of bacterial bronchitis\*



**Brief Summary.** Consult the package literature for prescribing information.

**Indications and Usage:** Ceclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci).

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor.

**Contraindication:** Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

**Warnings:** IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS TO BOTH DRUG CLASSES (INCLUDING ANAPHYLAXIS AFTER PARENTERAL USE).

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

**Precautions:** If an allergic reaction to cefaclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of cefaclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs test may be due to the drug.

Ceclor should be administered with caution in the presence of markedly impaired renal function. Under such a condition, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

**Usage in Pregnancy—**Although no teratogenic or antifertility effects were seen in reproduction studies in mice and rats receiving up to 12 times the maximum human dose or in ferrets given three times the maximum human dose, the safety of this drug for use in human pregnancy has not been established. The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus.

**Usage in Infancy—**Safety of this product for use in infants less than one month of age has not been established.

**Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis\*—are sensitive to treatment with Ceclor.<sup>1-6</sup>**

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Ceclor.<sup>7</sup>

# Ceclor®

## cefaclor

Pulvules®, 250 and 500 mg

**Adverse Reactions:** Adverse effects considered related to cefaclor therapy are uncommon and are listed below: Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70) and nausea and vomiting (1 in 90).

**Hypersensitivity reactions** have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100), Pruritus, urticaria, and positive Coombs tests each occur in less than 1 in 200 patients.

Cases of serum-sickness-like reactions, including the above skin manifestations, fever, and arthralgia/arthritis, have been reported. Anaphylaxis has also been reported.

**Other effects** considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

**Causal Relationship Uncertain—**Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

**Hepatic—**Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

**Hematopoietic—**Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

**Renal—**Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

[103080R]

\*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.<sup>8</sup>

**Note:** Ceclor® (cefaclor) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

#### References

1. Antimicrob. Agents Chemother., 8:91, 1975.
2. Antimicrob. Agents Chemother., 11:470, 1977.
3. Antimicrob. Agents Chemother., 13:584, 1978.
4. Antimicrob. Agents Chemother., 12:490, 1977.
5. Current Chemotherapy (edited by W. Siegenthaler and R. Luthy), II: 880. Washington, D.C.: American Society for Microbiology, 1978.
6. Antimicrob. Agents Chemother., 13:861, 1978.
7. Data on file, Eli Lilly and Company.
8. Principles and Practice of Infectious Diseases (edited by G.L. Mandell, R.G. Douglas, Jr., and J.E. Bennett), p. 487. New York: John Wiley & Sons, 1979.



Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285.

Eli Lilly Industries, Inc. Carolina, Puerto Rico 00630



# Rules Eased on Deductions for Foreign-Convention Expenses

Back in 1976, Congress enacted tough, complex restrictions on what can be written off by business and professional people who combine work with fun on trips to foreign conventions, seminars and similar meetings. (See Code Section 274(h).) These rules have been described as a prime example of legislative overkill, and not surprisingly, proved extremely unpopular, not just with American business but with the Canadian and Mexican governments.

Now Congress has discarded the restriction, though it tacked on a new one. Here's a summary of: (1) the *old law* that is applicable to conventions that began *before* 1981, and (2) the changes that took effect *at the start of* 1981.

## Rules for 1980 Conventions

No deduction is permitted for expenses incurred during 1980 to attend more than two conventions *outside* the U. S., or its possessions. (Puerto Rico and the Virgin Islands are not considered "foreign" for this purpose.) If you attended more than two, you have to pinpoint the specific two that you are using for deduction purposes. Expenses for the others do not count.

The two-convention limitation also applies to *employer reimbursements* to an employee for convention expenses. The employer is entitled to deduct the reimbursement only to the extent the employee is entitled to a deduction; that is, the employer receives a deduction for the same two conventions the employee selects.

However, neither the two-convention limitation nor the restrictions mentioned below, apply to a U. S. citizen who, while a bona fide resident of a foreign country, attended a convention in that country.

- The deduction for subsistence (lodging, meals and other necessary living expenses) cannot exceed the fixed per-diem rate allowed U. S. Government employees at the same location.

*Subsistence expenses* for any one day are not deductible at all unless you pass *either* one of these tests:

- 1) The convention schedule for *that day* must include at least six hours of business activities, of which you attended at least four. (A half day's deduction is allowed if at least three hours were scheduled and you attended for at least two.)

- 2) You can deduct subsistence for *all* of the convention days (or half days) if you attended at least two-thirds of the scheduled business activities and *each* day consisted of at least six scheduled hours (three for half-days).

- For purposes of determining whether the con-

---

**The new reasonableness test can bar a deduction for a meeting that qualified under the old law. You can elect to apply the pre-1981 rules to a convention beginning after 1980 if that convention was *scheduled on or before* December 31, 1980.**

---

vention scheduled six (or three) hours of business activities, you cannot count parties, receptions or similar social functions, though you can count the time attributable to a business-related speech by a banquet speaker.

- Generally, the deduction for *transportation* cannot be more than the lowest coach or economy class airfare to and from the convention site. But if there is no such low-cost service, the the cost of going first class can be deducted. There is no limit on the deduction for the part of the trip that was *within* the U. S.

- Yet another wrinkle bars a full deduction for transportation outlays unless you spent at least half of the total trip days (not counting days spent traveling to and from the convention) on business-related activities. If you spent less than half, you have to figure your transportation deduction by dividing "total days" by "business days."

- Your tax return for 1980 must be accompanied by a signed statement listing total trip days (not counting travel days) and the number of hours spent on business activities, along with a convention program or agenda of activities and a signed statement from the convention sponsor.

## Rules for Post-1980 Conventions

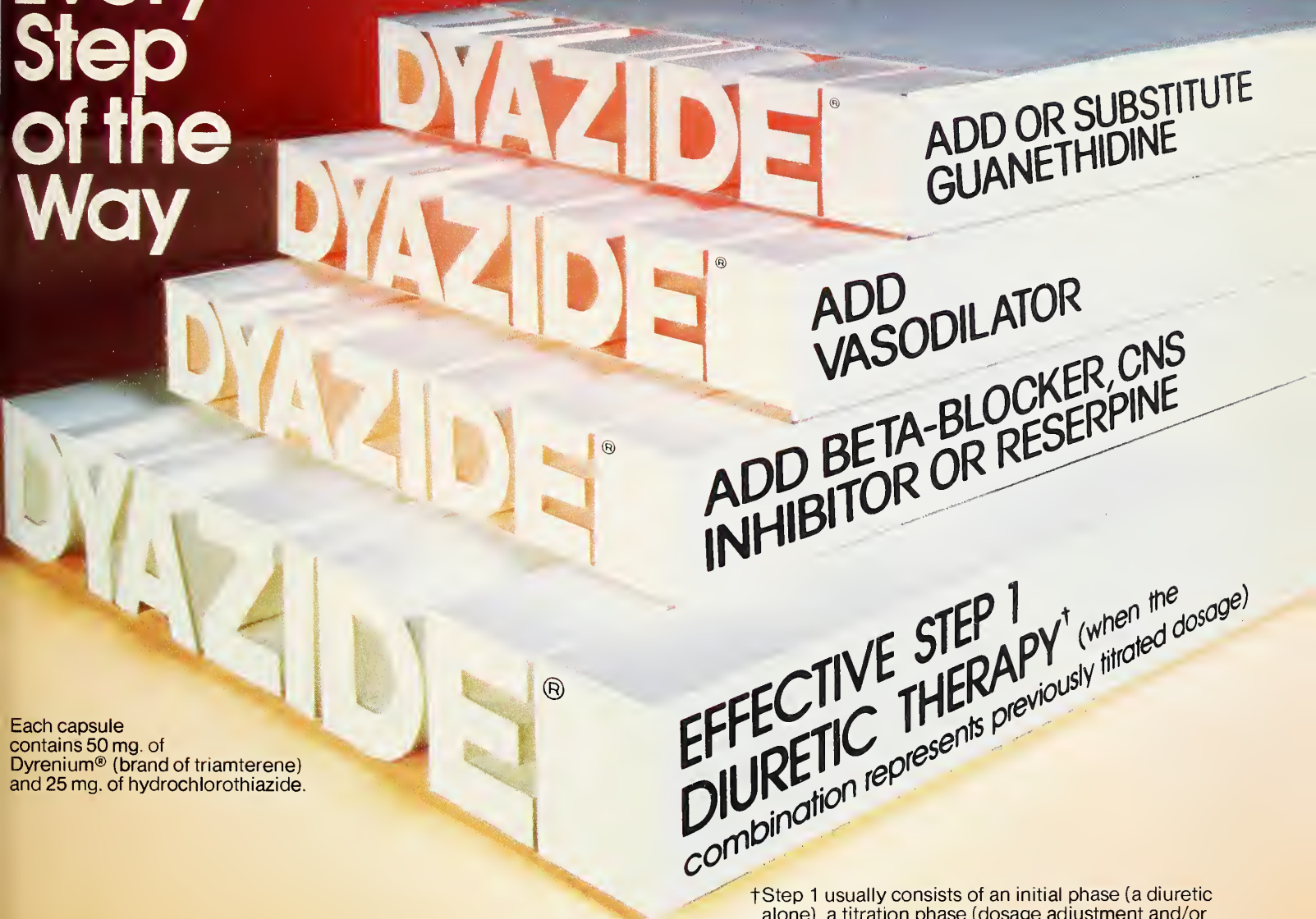
The new rules eliminate the two-convention subsistence and coach-fare limitations and the special reporting requirements for conventions and seminars beginning after 1980. However, a new "reasonableness" test was added.

Under the new rules, you cannot deduct expenses



# In Hypertension\*...When You Need to Conserve K<sup>+</sup>

## Every Step of the Way



Each capsule contains 50 mg. of Dyrenium® (brand of triamterene) and 25 mg. of hydrochlorothiazide.

**EFFECTIVE STEP 1  
DIURETIC THERAPY<sup>†</sup>** (when the combination represents previously titrated dosage)

<sup>†</sup>Step 1 usually consists of an initial phase (a diuretic alone), a titration phase (dosage adjustment and/or addition of a K<sup>+</sup> supplement or K<sup>+</sup>-sparing agent) and a maintenance phase (a diuretic alone or in combination with a K<sup>+</sup> supplement or K<sup>+</sup>-sparing agent).

### Serum K<sup>+</sup> and BUN should be checked periodically (see Warnings).

**Before prescribing, see complete prescribing information in SK&F Co. literature or PDR. A brief summary follows:**

#### **WARNING**

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

**Contraindications:** Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

**Warnings:** Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K<sup>+</sup> levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K<sup>+</sup> intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, throm-

bocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

**Precautions:** Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Watch for signs of impending coma in severe liver disease. If spironolactone is used concomitantly, determine serum K<sup>+</sup> frequently; both can cause K<sup>+</sup> retention and elevated serum K<sup>+</sup>. Two deaths have been reported with such concomitant therapy (in one, recommended dosage was exceeded, in the other serum electrolytes were not properly monitored). Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with thiazides. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Anti-hypertensive effect may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with

possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia, although uncommon, has been reported. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

**Adverse Reactions:** Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances. Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and, rarely, allergic pneumonitis have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components.

**Supplied:** Bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (intended for institutional use only); in Patient-Pak™ unit-of-use bottles of 100.

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a SmithKline company  
Carolina, P.R. 00630



# Motrin<sup>®</sup> vs aspirin w/codeine..

(ibuprofen)





# compare the analgesic effect

A *Motrin* 400 mg dose relieved postsurgical dental pain as effectively as a combination of 650 mg aspirin and 60 mg codeine (two aspirin-with-codeine No. 3 tablets) in a study of 129 patients.

In this double-blind, placebo-controlled, randomized study, no statistically significant difference in relief of pain was noted at 1, 2, and 4 hours between the *Motrin* and aspirin-with-codeine groups...

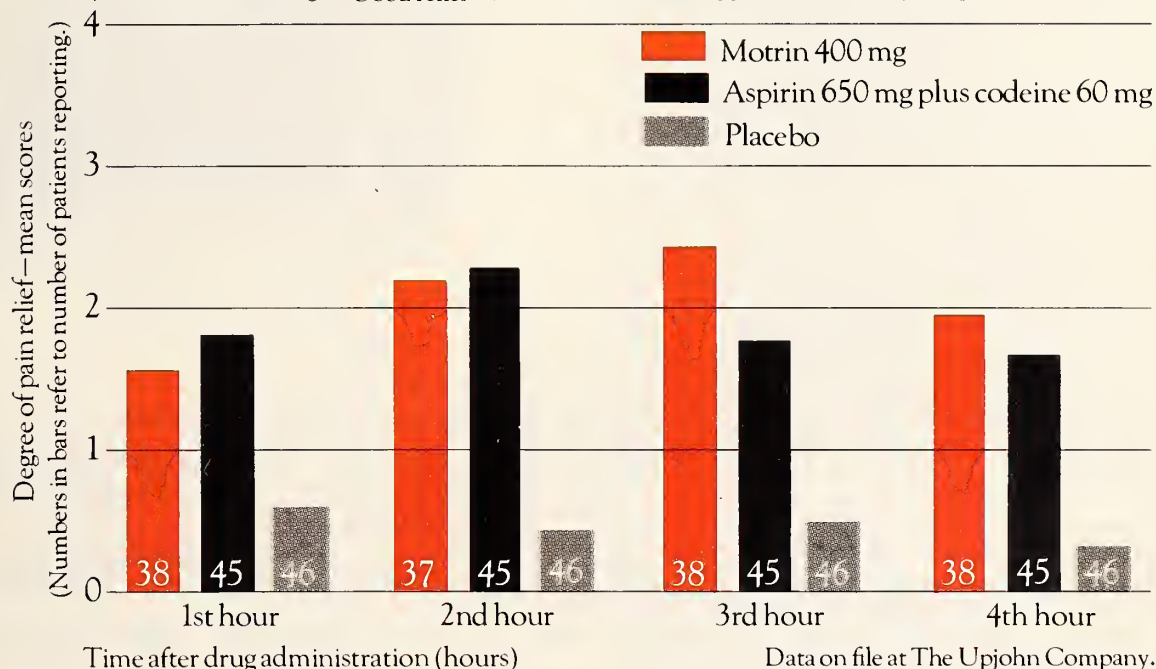
with *Motrin* being significantly more effective ( $p = 0.03$ ) at the three-hour interval.

Active treatment was significantly more effective ( $p < 0.0001$ ) than placebo at all time intervals.

## Comparison of pain relief

### *Motrin* vs aspirin-codeine combination

4 = Excellent relief 3 = Good relief 2 = Fair relief 1 = Poor relief 0 = No relief



One tablet q4-6h prn

For relief of mild to moderate pain:

**Motrin<sup>®</sup> 400mg** TABLETS  
ibuprofen, Upjohn

- Not a narcotic • Not addictive • Not habit forming • Nonscheduled
- Acts peripherally • Relieves pain rapidly • Relieves inflammation • Indicated in acute and chronic pain • Well tolerated (The most common side effect with *Motrin* is mild gastrointestinal disturbance.)

Please turn the page for a brief summary of prescribing information.

**Upjohn**



# Motrin® (ibuprofen) now proved an effective analgesic for mild to moderate pain

**Motrin® Tablets** (ibuprofen, Upjohn)

**Indications and Usage:** Relief of mild to moderate pain.

Treatment of signs and symptoms of rheumatoid arthritis and osteoarthritis during acute flares and in long-term management. Safety and efficacy have not been established in Functional Class IV rheumatoid arthritis.

**Contraindications:** Individuals hypersensitive to it, or with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to aspirin or other nonsteroidal anti-inflammatory agents (see WARNINGS).

**Warnings:** Anaphylactoid reactions have occurred in patients with aspirin hypersensitivity (see CONTRAINDICATIONS).

Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Ulceration, perforation, and bleeding may end fatally. An association has not been established. Motrin should be given under close supervision to patients with a history of upper gastrointestinal tract disease, only after consulting ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be tried. If Motrin must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

**Precautions:** Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If these develop, discontinue Motrin and the patient should have an ophthalmologic examination, including central visual fields.

Fluid retention and edema have been associated with Motrin; use with caution in patients with a history of cardiac decompensation.

Motrin can inhibit platelet aggregation and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy should have therapy tapered slowly when Motrin is added.

**Drug interactions.** *Aspirin:* Used concomitantly may decrease Motrin blood levels. *Coumarin:* Bleeding has been reported in patients taking Motrin and coumarin.

**Pregnancy and nursing mothers:** Motrin should not be taken during pregnancy nor by nursing mothers.

## Adverse Reactions

### Incidence greater than 1%

**Gastrointestinal:** The most frequent type of adverse reaction occurring with Motrin is gastrointestinal (4% to 16%). This includes nausea,\* epigastric pain,\* heartburn,\* diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of the GI tract (bloating and flatulence). **Central Nervous System:** Dizziness,\* headache, nervousness. **Dermatologic:** Rash\* (including maculopapular type), pruritus. **Special Senses:** Tinnitus. **Metabolic:** Decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS).

\*Incidence 3% to 9%.

### Incidence less than 1 in 100

**Gastrointestinal:** Upper GI ulcer with bleeding and/or perforation, hemorrhage, melena. **Central Nervous System:** Depression, insomnia. **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme. **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure. **Special Senses:** Amblyopia (see PRECAUTIONS). **Hematologic:** Leukopenia, decreased hemoglobin and hematocrit.

### Causal relationship unknown

**Gastrointestinal:** Hepatitis, jaundice, abnormal liver function. **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities. **Dermatologic:** Alopecia, Stevens-Johnson syndrome. **Special Senses:** Conjunctivitis, diplopia, optic neuritis. **Hematologic:** Hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes. **Allergic:** Fever, serum sickness, lupus erythematosus syndrome. **Endocrine:** Gynecomastia, hypoglycemia. **Cardiovascular:** Arrhythmias. **Renal:** Decreased creatinine clearance, polyuria, azotemia.

**Overdosage:** In cases of acute overdosage, the stomach should be emptied. The drug is acidic and excreted in the urine, so alkaline diuresis may be beneficial.

**Dosage and Administration:** Rheumatoid arthritis and osteoarthritis, including flares of chronic disease: Suggested dosage is 300, 400, or 600 mg t.i.d. or q.i.d. Mild to moderate pain: 400 mg every 4 to 6 hours as necessary for relief of pain.

Do not exceed 2400 mg per day.

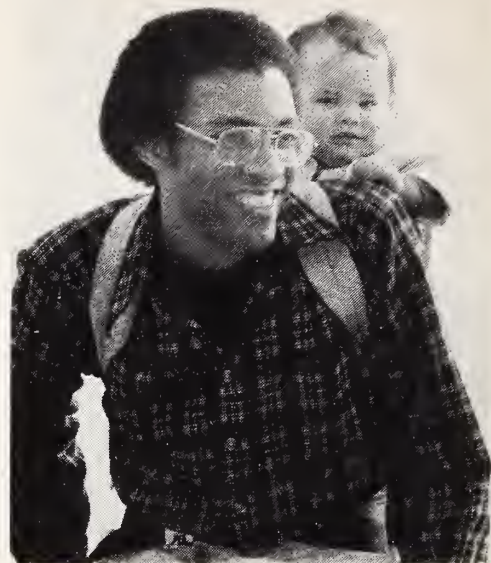
**Caution:** Federal law prohibits dispensing without prescription.

For additional product information, see your Upjohn representative or consult the package insert.

**Upjohn** THE UPJOHN COMPANY  
Kalamazoo, Michigan 49001 USA

MED B-4-S

# WHY I'M A UNITED WAY VOLUNTEER



**STEPHEN GRAHAM**

**Home:** Seattle, Washington

**Career:** Attorney

**Age:** 29

**Married:** One daughter

**Interests:** Hiking, writing, cartooning, bicycling and volunteering for United Way

"Because there's more to my life than just me.

"Like being with my family. Hiking along the timberline. And getting involved in my community.

"Volunteering for United Way adds another dimension to my life. I'm putting my skills to work for the benefit of the entire community. And I'm meeting all kinds of people who are doing the same.

"Most important of all, I'm learning more about human care needs. And how—as a United Way volunteer—I can make a difference here in Seattle. It's a valuable lesson in leadership.

"By helping shape my community's future, through United Way, I'm more than just living my life. I'm fulfilling it."



**Thanks to you...**

**it works...**

**for ALL OF US United Way**



for a convention, seminar, or similar meeting held outside the North American area unless, taking certain factors into account, it is "as reasonable" for the meeting to be held outside the North American area as within it.

The factors to be considered in determining reasonableness are: (1) the purpose of the meeting and the activities taking place at the meeting; (2) the purposes and activities of the sponsoring organizations or groups; and (3) the residences of the active members of the sponsoring organization and the places at which other meetings of the sponsoring organizations or groups have been or will be held. The reasonableness requirement is not satisfied if the convention, seminary, etc., is held on a cruise ship (whether within or without U. S. territorial waters).

North American area is defined to include the United States (and its possessions), Canada and Mexico.

## The advertising in THE JOURNAL

keeps you informed  
and helps pay the  
publishing costs!

When the local  
representative calls,  
tell him you saw  
his company's ad in  
your journal.

“I quit all  
other temporary  
agencies to work  
exclusively for  
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## NOMINATING COMMITTEE

The Nominating Committee of the Kansas Medical Society met in February and submits to the House of Delegates the following list of nominations for the elective offices of the Society. Wherever more than one nomination appears, they are presented in alphabetical order.

### President Elect

**Kermit G. Wedel, M.D.**, Minneapolis. Born in 1932. Graduated from the University of Kansas School of Medicine in 1960. Is in Family Practice. Is now serving as First Vice President and AMA Alternate Delegate.

### First Vice President

**Jimmie A. Gleason, M.D.**, Topeka. Born in 1933. Graduated from the University of Kansas School of Medicine in 1958. Practices Obstetrics and Gynecology. Is now Second Vice President and is serving as Chairman of the Legislative Committee.

### Second Vice President

**F. Calvin Bigler, M.D.**, Garden City. Born in 1931. Graduated from Yale University School of Medicine in 1957. Practices General Surgery. Is Past President of the Kansas chapter, American College of Surgeons, and has been active in Society affairs.

**Louis M. Culp, M.D.**, Kansas City. Born in 1924. Graduated from the University of Kansas School of Medicine in 1953. Is in Family Practice. Is now serving as Councilor and is President of Kansas Foundation for Medical Care.

**Rex R. Fischer, M.D.**, Manhattan. Born in 1934. Graduated from the University of Nebraska College of Medicine in 1960. Practices Obstetrics and Gynecology. Currently is President of the Blue Shield Board of Directors.

### Constitutional Secretary

**Jack R. Cooper, M.D.**, Shawnee Mission. Born in 1917. Graduated from Ohio State University School of Medicine in 1943. Practices Neurosurgery. Is currently serving as Secretary.

### Treasurer

**William K. Walker, M.D.**, Sedan. Born in 1928. Graduated from the University of Kansas School of Medicine in 1945. Is in Family Practice. Is now serving as Treasurer.

### Speaker

**Clair C. Conard, M.D.**, Dodge City. Born in 1927. Graduated from the University of Kansas School of Medicine in 1955. Practices Internal Medicine. Now serves as AMA Delegate and Speaker of the KMS House of Delegates.

### Vice Speaker

**G. Rex Stone, M.D.**, Manhattan. Born in 1929. Graduated from the University of Kansas School of Medicine in 1954. Practices General Surgery. Has been active in Society affairs.

### AMA Delegate

**K. William Bruner, Jr., M.D.**, Wichita. Born in 1944. Graduated from Harvard Medical School in 1970. Practices Pathology. Currently serves on several KMS committees.

**Clair C. Conard, M.D.**, Dodge City. Born in 1927. Gradu-

ated from the University of Kansas School of Medicine in 1955. Practices Internal Medicine. Now serves as AMA Delegate and Speaker of the KMS House of Delegates.

### AMA Alternate Delegate

**Lew W. Purinton, M.D.**, Wichita. Born in 1923. Graduated from the University of Kansas School of Medicine in 1948. Practices Internal Medicine. Is now serving as AMA Alternate Delegate.

**Thomas F. Taylor, M.D.**, Salina. Born in 1926. Graduated from the University of Kansas School of Medicine in 1953. Is in Family Practice. Is Past President of KMS and has served as chairman of KaMPAC and Speaker of the KMS House of Delegates.

**Emerson D. Yoder, M.D.**, Denton. Born in 1914. Graduated from the University of Kansas School of Medicine in 1949. Is in Family Practice. Is Past President of KMS and currently serves as Chairman of Mediserve.

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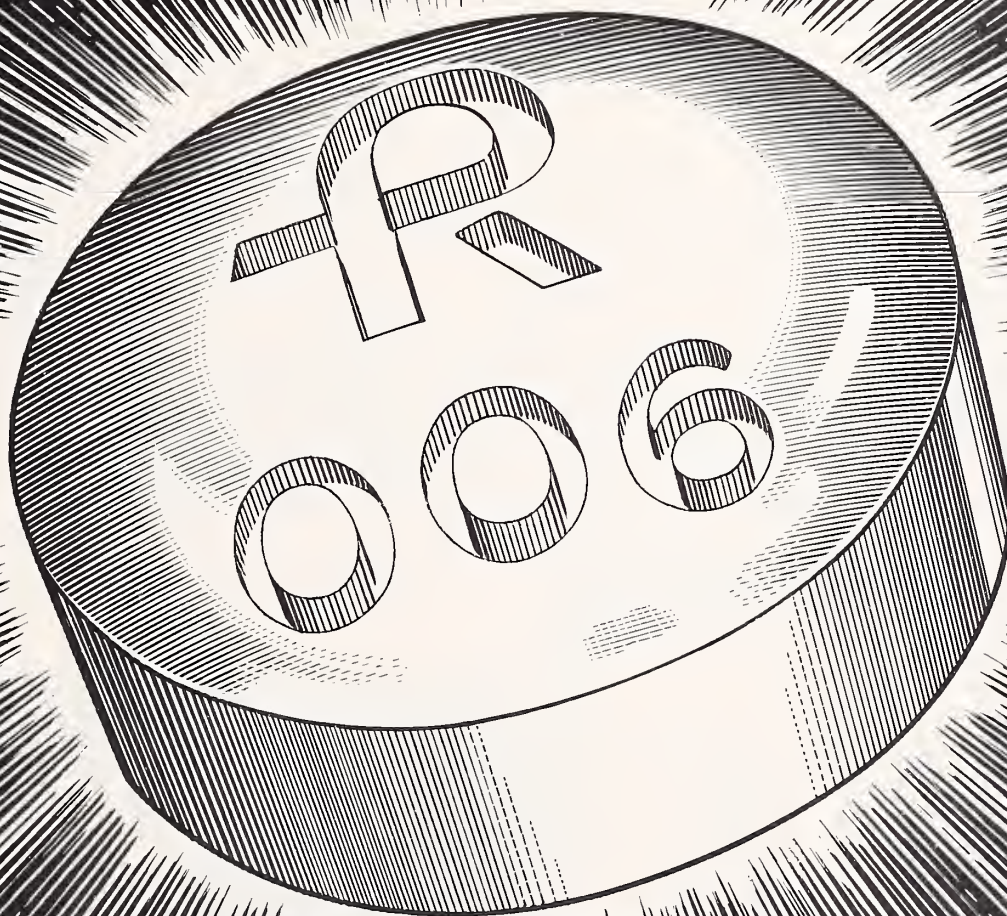
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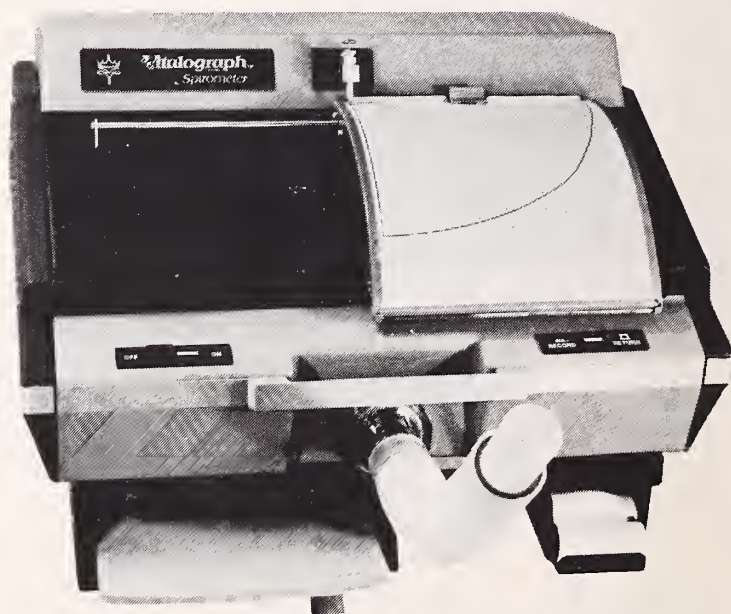


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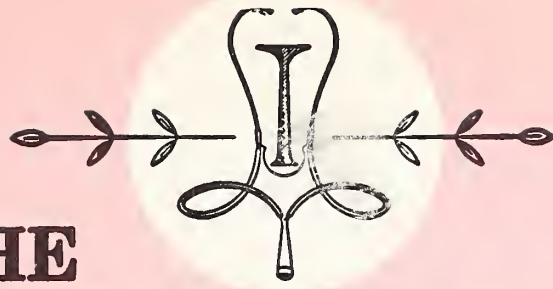


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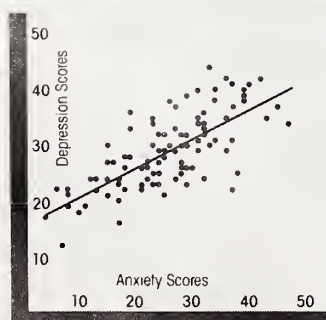
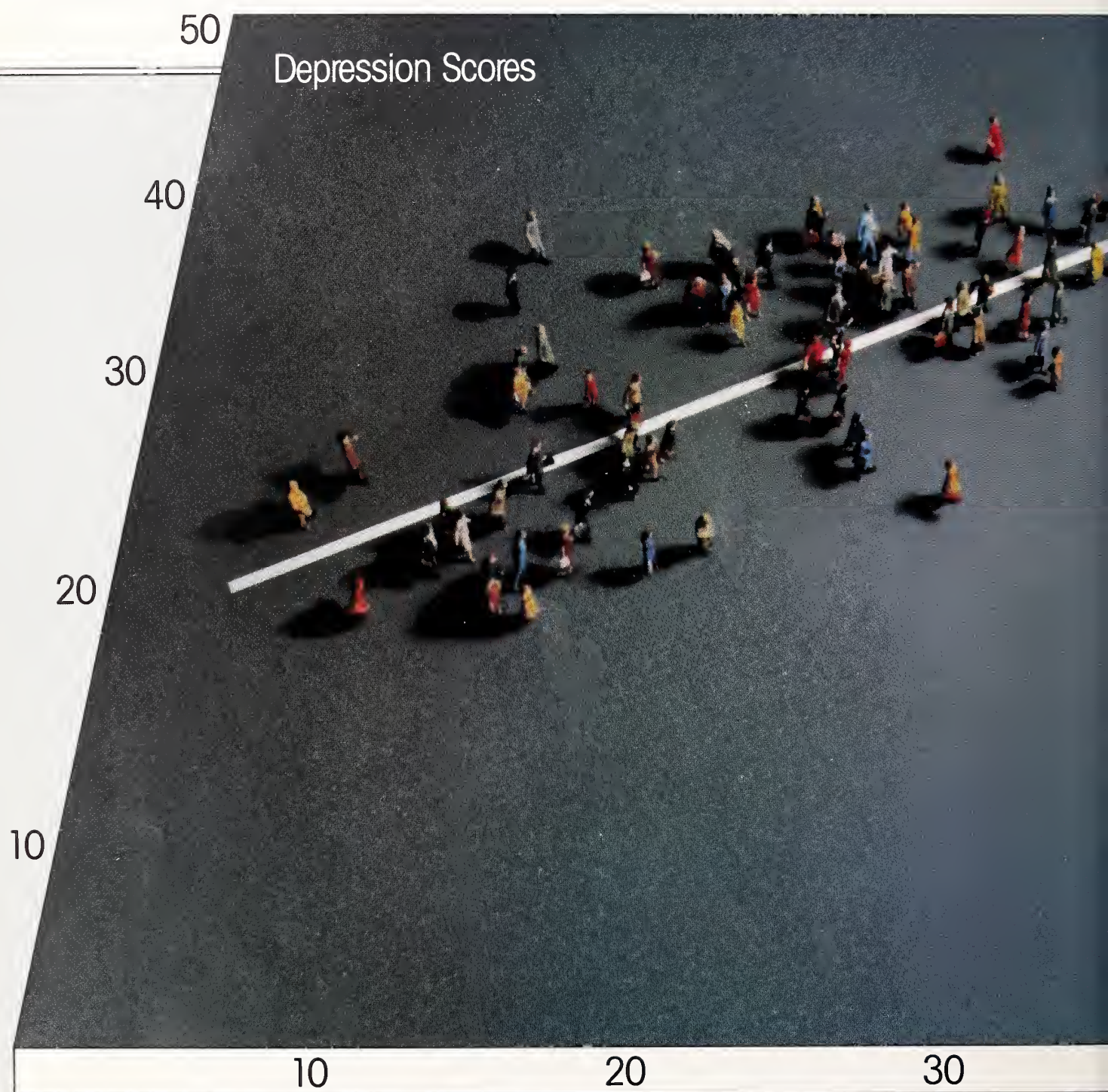
The Kansas Medical Society Impaired Physicians Program is now operational. If you desire more information concerning this program, if you know an impaired colleague who needs help, or if you are concerned about yourself or your spouse, please contact one of the Committee members nearest you, as listed below, or the KMS Executive Office. All such contacts will be held in strictest confidence and the caller need not reveal his name, if he/she so desires.

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# FOR THE 7 OF 10 NONPSYCHOTIC



## Clear correlation between anxiety and depression<sup>3</sup>

The above graph illustrates a relationship between anxiety and depression, indicating that patients seldom present with anxiety or depression alone; more often they have both in varying degrees. Data based on a sampling of 100 outpatients (64 male; 36 female) seen at a general psychiatric clinic.

<sup>3</sup>Adapted from Claghorn, J. The anxiety-depression syndrome. *Psychosomatics* 11:438-441, Sept-Oct 1970.



# DEPRESSED PATIENTS WHO ARE ALSO ANXIOUS<sup>1,2</sup>

## Most depressed patients are also anxious. . .

Some authors estimate that 70% of all nonpsychotic patients with symptoms of depression have concomitant symptoms of anxiety.<sup>1,2</sup> One author found a distinct correlation between anxiety and depression scores in 100 nonpsychotic outpatients administered the Minnesota Multiphasic Personality Inventory in a general psychiatric clinic.<sup>3</sup> As depression scores increased, so did anxiety scores. No attempt was made to select patients other than to exclude psychotics.

## but not psychotic

The logic of treating both components of anxious depression is clear. Antipsychotics, like the phenothiazines, however, carry a well-documented risk of tardive dyskinesia.<sup>4</sup> Because of this, an APA Task Force recently recommended the judicious use of phenothiazines in cases other than chronic psychosis or the use of alternative treatments.

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**References:** 1. Rickels K: Drug treatment of anxiety, in *Psychopharmacology in the Practice of Medicine*, ed. Jorvik ME. New York, Appleton-Century-Crofts, 1977, p. 316. 2. Schotzberg AF, Cole JO: Benzodiazepines in depressive disorders. *Arch Gen Psychiatry* 35:1359-1365, 1978. 3. Cloghorm J: The anxiety-depression syndrome. *Psychosomatics* 11:438-441, 1970. 4. The Task Force on Late Neurological Effects of Antipsychotic Drugs: Tardive dyskinesia, summary of a task force report of the American Psychiatric Association. *Am J Psychiatry* 137:1163-1172, 1980. 5. Feighner JP *et al*: A placebo-controlled multicenter trial of Limbitrol versus its components (amitriptyline and chlordiazepoxide) in the symptomatic treatment of depressive illness. *Psychopharmacology* 61:217-225, 1979.

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Please see summary of product information on next page.

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**Contraindications:** Known hypersensitivity to benzodiazepines or tricyclic antidepressants. Do not use with monoamine oxidase (MAO) inhibitors or within 14 days following discontinuation of MAO inhibitors since hyperpyretic crises, severe convulsions and deaths have occurred with concomitant use; then initiate cautiously, gradually increasing dosage until optimal response is achieved. Contraindicated during acute recovery phase following myocardial infarction.

**Warnings:** Use with great care in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur in patients taking tricyclic antidepressants and anticholinergic-type drugs. Closely supervise cardiovascular patients. (Arrhythmias, sinus tachycardia and prolongation of conduction time reported with use of tricyclic antidepressants, especially high doses. Myocardial infarction and stroke reported with use of this class of drugs.) Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving).

**Usage in Pregnancy:** Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Since physical and psychological dependence to chlordiazepoxide have been reported rarely, use caution in administering Limbitrol to addiction-prone individuals or those who might increase dosage; withdrawal symptoms following discontinuation of either component alone have been reported (nausea, headache and malaise for amitriptyline; symptoms [including convulsions] similar to those of barbiturate withdrawal for chlordiazepoxide).

**Precautions:** Use with caution in patients with a history of seizures, in hyperthyroid patients or those on thyroid medication, and in patients with impaired renal or hepatic function. Because of the possibility of suicide in depressed patients, do not permit easy access to large quantities in these patients. Periodic liver function tests and blood counts are recommended during prolonged treatment. Amitriptyline component may block action of guanethidine or similar antihypertensives. Concomitant use with other psychotropic drugs has not been evaluated; sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Limbitrol should not be taken during the nursing period. Not recommended in children under 12.

In the elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects.

**Adverse Reactions:** Most frequently reported are those associated with either component alone: drowsiness, dry mouth, constipation, blurred vision, dizziness and bloating. Less frequently occurring reactions include vivid dreams, impotence, tremor, confusion and nasal congestion. Many depressive symptoms including anorexia, fatigue, weakness, restlessness and lethargy have been reported as side effects of both Limbitrol and amitriptyline. Granulocytopenia, jaundice and hepatic dysfunction have been observed rarely.

The following list includes adverse reactions not reported with Limbitrol but requiring consideration because they have been reported with one or both components or closely related drugs:

**Cardiovascular:** Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke.

**Psychiatric:** Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania and increased or decreased libido.

**Neurologic:** Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns.

**Anticholinergic:** Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract.

**Allergic:** Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus.

**Hematologic:** Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia.

**Gastrointestinal:** Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue.

**Endocrine:** Testicular swelling and gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female and elevation and lowering of blood sugar levels.

**Other:** Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling.

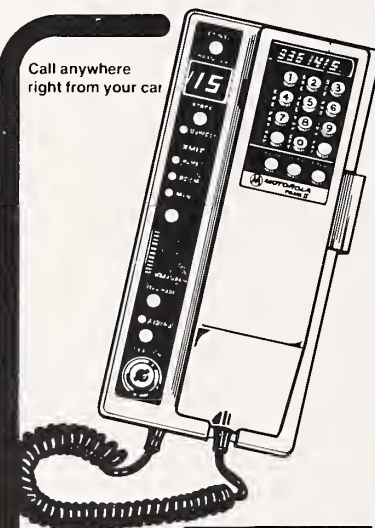
**Overdosage:** Immediately hospitalize patient suspected of having taken an overdose. Treatment is symptomatic and supportive. I.V. administration of 1 to 3 mg physostigmine salicylate has been reported to reverse the symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.

**Dosage:** Individualize according to symptom severity and patient response. Reduce to smallest effective dosage when satisfactory response is obtained. Larger portion of daily dose may be taken at bedtime. Single h.s. dose may suffice for some patients. Lower dosages are recommended for the elderly. Limbitrol 10-25, initial dosage of three to four tablets daily in divided doses, increased to six tablets or decreased to two tablets daily as required. Limbitrol 5-12.5, initial dosage of three to four tablets daily in divided doses, for patients who do not tolerate higher doses.

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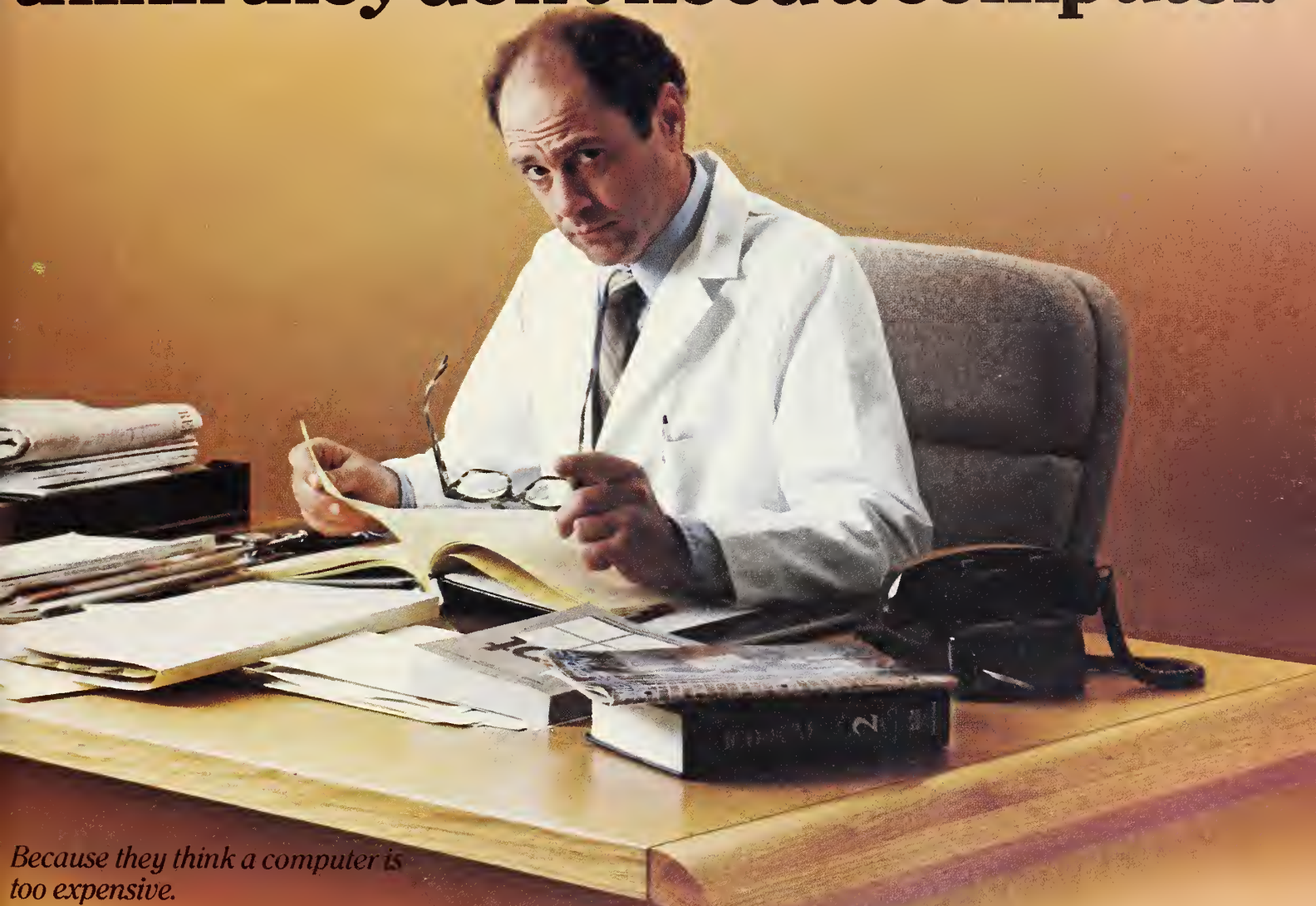
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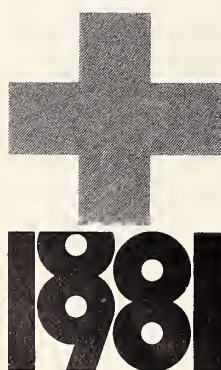
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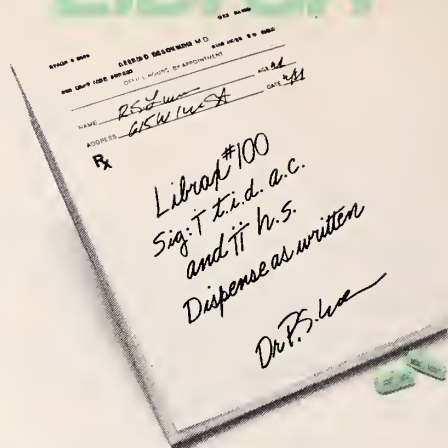
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Specify  
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Each capsule contains 5 mg chlordiazepoxide HCl and 2.5 mg clidinium Br.

Please consult complete prescribing information, a summary of which follows:

**Indications:** Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows. "Possibly" effective, as adjunctive therapy in the treatment of peptic ulcer and in the treatment of the irritable bowel syndrome (irritable colon, spastic colon, mucous colitis) and acute enterocolitis. Final classification of the less-than-effective indications requires further investigation.

**Contraindications:** Glaucoma; prostatic hypertrophy, benign bladder neck obstruction; hypersensitivity to chlordiazepoxide HCl and/or clidinium bromide.

**Warnings:** Caution patients about possible combined effects with alcohol and other CNS depressants, and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Physical and psychological dependence rarely reported on recommended doses, but use caution in administering Librium® (chlordiazepoxide HCl/Roche) to known addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions) reported following discontinuation of the drug.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy. Advise patients to discuss therapy if they intend to or do become pregnant.

As with all anticholinergics, inhibition of lactation may occur

**Precautions:** In elderly and debilitated, limit dosage to smallest effective amount to preclude ataxia, oversedation, confusion (no more than 2 capsules/day initially; increase gradually as needed and tolerated). Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider pharmacology of agents, particularly potentiating drugs such as MAO inhibitors, phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions reported in psychiatric patients. Employ usual precautions in treating anxiety states with evidence of impending depression, suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation reported very rarely in patients receiving the drug and oral anticoagulants, causal relationship not established.

**Adverse Reactions:** No side effects or manifestations not seen with either compound alone reported with Librax. When chlordiazepoxide HCl is used alone, drowsiness, ataxia, confusion may occur, especially in elderly and debilitated, avoidable in most cases by proper dosage adjustment, but also occasionally observed at lower dosage ranges. Syncope reported in a few instances. Also encountered: isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent, generally controlled with dosage reduction, changes in EEG patterns may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice, hepatic dysfunction reported occasionally with chlordiazepoxide HCl, making periodic blood counts and liver function tests advisable during protracted therapy. Adverse effects reported with Librax typical of anticholinergic agents, i.e., dryness of mouth, blurring of vision, urinary hesitancy, constipation. Constipation has occurred most often when Librax therapy is combined with other spasmolytics and/or low residue diets.



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Each capsule contains 5 mg chlordiazepoxide HCl and 2.5 mg cimetidine Br

*Antianxiety/Antisecretory/Antispasmodic*

Librax has been evaluated as possibly effective for this indication. Please see brief summary of prescribing information on facing page

Photograph of simulated gastric hypersecretion



Although weight loss achieved in a weight control program varies from patient to patient, this simulated sequence of a professional model illustrates dramatically the benefits of a successful weight loss program.



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...takes dietary restriction, regular exercise, behavior modification, and sometimes the addition of an effective anorectic.

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# Tenuate® Dospan® <sup>IV</sup>

(diethylpropion hydrochloride NF)

75 mg. controlled-release tablets

the #1 prescribed anorectic

## An effective short-term adjunct in an indicated weight loss program

Overweight patients in certain diagnostic categories often require strict obesity control. Diethylpropion hydrochloride has been reported useful in obese patients with certain complications. While it is not suggested that Tenuate in any way reduces these complications in the overweight, it may have a useful place as a short-term adjunct in a prescribed dietary regimen. Tenuate should not be administered to patients with severe hypertension; see additional Warnings and Precautions on this page.

## In uncomplicated obesity

Many patients, on the other hand, present with excess fat but no disease. While this condition is often termed uncomplicated obesity, complications of both a social and a psychologic nature may be distressingly real for the patients. In these cases, a short-term regimen of Tenuate can help reinforce your dietary counsel during the important early weeks of an indicated weight loss program.

## Clinical effectiveness

The anorectic effectiveness of diethylpropion hydrochloride is well documented. No less than 18 separate double-blind, placebo-controlled studies attest to its usefulness in daily practice.<sup>1</sup> And the unique chemistry of Tenuate provides "...anorectic potency with minimal overt central nervous system or cardiovascular stimulation."<sup>2</sup> Compared with the amphetamines, diethylpropion has minimal potential for abuse.

**Tenuate—it makes sense.  
And it's responsible medicine.**

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Tenuate® <sup>IV</sup>  
(diethylpropion hydrochloride NF)

Tenuate Dospan® <sup>IV</sup>  
(diethylpropion hydrochloride NF)  
controlled-release

AVAILABLE ONLY ON PRESCRIPTION

### Brief Summary

**INDICATION:** Tenuate and Tenuate Dospan are indicated in the management of exogenous obesity as a short-term adjunct (a few weeks) in a regimen of weight reduction based on caloric restriction. The limited usefulness of agents of this class should be measured against possible risk factors inherent in their use such as those described below.

**CONTRAINDICATIONS:** Advanced arteriosclerosis, hyperthyroidism, known hypersensitivity, or idiosyncrasy to the sympathomimetic amines, glaucoma. Agitated states. Patients with a history of drug abuse. During or within 14 days following the administration of monoamine oxidase inhibitors, (hypertensive crises may result).

**WARNINGS:** If tolerance develops, the recommended dose should not be exceeded in an attempt to increase the effect; rather, the drug should be discontinued. Tenuate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle; the patient should therefore be cautioned accordingly. *Drug Dependence:* Tenuate has some chemical and pharmacologic similarities to the amphetamines and other related stimulant drugs that have been extensively abused. There have been reports of subjects becoming psychologically dependent on diethylpropion. The possibility of abuse should be kept in mind when evaluating the desirability of including a drug as part of a weight reduction program. Abuse of amphetamines and related drugs may be associated with varying degrees of psychologic dependence and social dysfunction which, in the case of certain drugs, may be severe. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG. Manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxications is psychosis, often clinically indistinguishable from schizophrenia. *Use in Pregnancy:* Although rat and human reproductive studies have not indicated adverse effects, the use of Tenuate by women who are pregnant or may become pregnant requires that the potential benefits be weighed against the potential risks. *Use in Children:* Tenuate is not recommended for use in children under 12 years of age.

**PRECAUTIONS:** Caution is to be exercised in prescribing Tenuate for patients with hypertension or with symptomatic cardiovascular disease, including arrhythmias. Tenuate should not be administered to patients with severe hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of Tenuate and the concomitant dietary regimen. Tenuate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdosage. Reports suggest that Tenuate may increase convulsions in some epileptics. Therefore, epileptics receiving Tenuate should be carefully monitored. Titration of dose or discontinuance of Tenuate may be necessary.

**ADVERSE REACTIONS:** *Cardiovascular:* Palpitation, tachycardia, elevation of blood pressure, precordial pain, arrhythmia. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride. *Central Nervous System:* Overstimulation, nervousness, restlessness, dizziness, jitteriness, insomnia, anxiety, euphoria, depression, dysphoria, tremor, dyskinesia, mydriasis, drowsiness, malaise, headache; rarely psychotic episodes at recommended doses. In a few epileptics an increase in convulsive episodes has been reported. *Gastrointestinal:* Dryness of the mouth, unpleasant taste, nausea, vomiting, abdominal discomfort, diarrhea, constipation, other gastrointestinal disturbances. *Allergic:* Urticaria, rash, ecchymosis, erythema. *Endocrine:* Impotence, changes in libido, gynecomastia, menstrual upset. *Hematopoietic System:* Bone marrow depression, agranulocytosis, leukopenia. *Miscellaneous:* A variety of miscellaneous adverse reactions has been reported by physicians. These include complaints such as dyspnea, hair loss, muscle pain, dysuria, increased sweating, and polyuria.

**DOSEAGE AND ADMINISTRATION:** Tenuate (diethylpropion hydrochloride): One 25 mg. tablet three times daily, one hour before meals, and in mid-evening if desired to overcome night hunger. Tenuate Dospan (diethylpropion hydrochloride) controlled-release: One 75 mg. tablet daily, swallowed whole, in mid-morning. Tenuate is not recommended for use in children under 12 years of age.

**OVERDOSAGE:** Manifestations of acute overdosage include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states. Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Overdose of pharmacologically similar compounds has resulted in fatal poisoning, usually terminating in convulsions and coma. Management of acute Tenuate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Intravenous phentolamine (Regitine®) has been suggested on pharmacologic grounds for possible acute, severe hypertension, if this complicates Tenuate overdosage.

Product Information as of January, 1980

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Cayey, Puerto Rico 00633

Direct Medical Inquiries to:

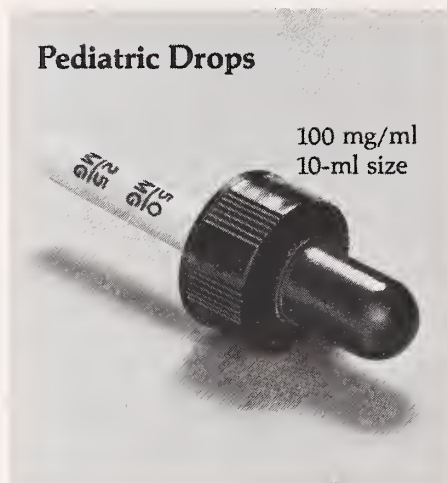
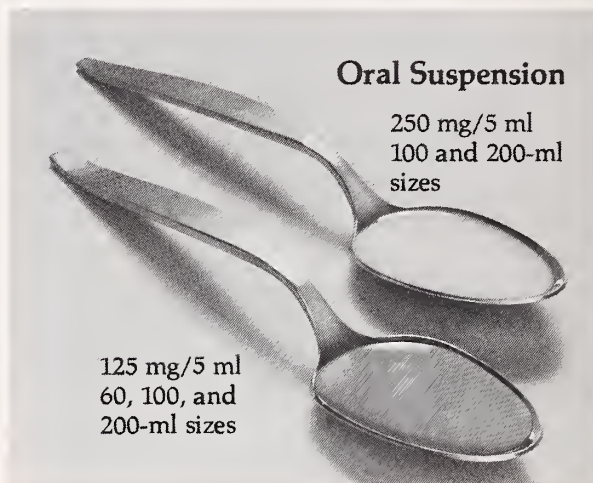
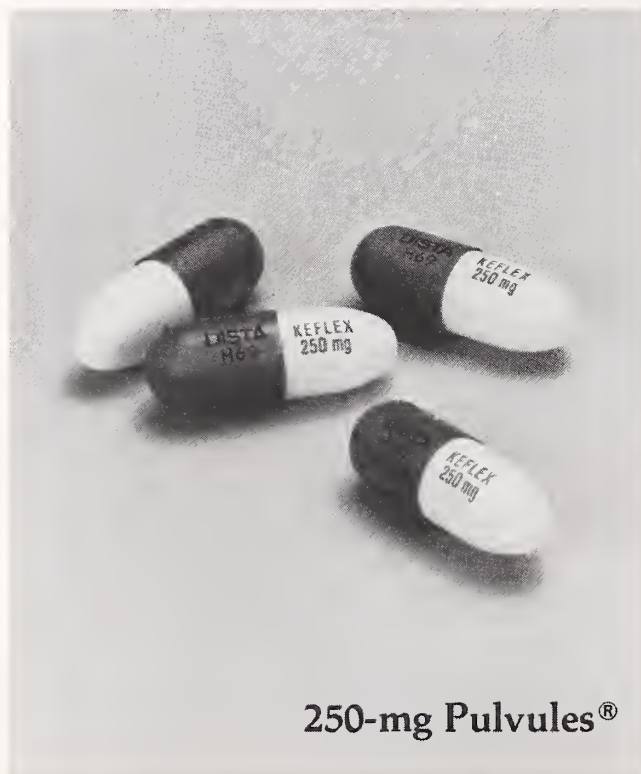
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**References:** 1. Citations available on request from Merrell Dow Pharmaceuticals Inc., Cincinnati, Ohio 45215. 2. Hoekenga, M.T. et al: A comprehensive review of diethylpropion hydrochloride. In Central Mechanisms of Anorectic Drugs, S. Garattini and R. Samanin, Ed., New York. Raven Press, 1978, pp. 391-404.



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**Dista Products Company**  
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# Books

The Journal acknowledges receipt of the following books:

## Doubleday

*The Pilates Method of Physical and Mental Conditioning* — Friedman and Eisen, 1980.

*Cry Babel* — Armstrong, 1979.

*Diabetic Menus, Meals and Recipes* — West & Eash, 1978.

*Nothing to Fear: Coping With Phobias* — Kent, 1977.

*Family Health and Home Nursing* — American Red Cross, 1979.

*The Low-Cholesterol Food Processor Cookbook* — Jones, 1980.

*Cooking Creatively For Your Diabetic Child* — Babington, 1979.

*Basic First Aid* — American Red Cross (4 volumes), 1980.

*How to Improve Your Child's Behavior Through Diet* — Stevens & Stoner, 1979.

## Doubleday (Anchor)

*How To Get Along With Your Stomach* — Nugent, 1979.

*Plagues and Peoples* — McNeill, 1977.

*Prisoners of Pain* — Janov 1980.

*Consumer's Guide to Cosmetics* — Conry, 1980.

*Sex by Prescription* — Szasz, 1980.

*Burn Out* — Freudenberg, 1980.

## Doubleday (Dolphin)

*Visionetics: The Holistic Way to Better Eyesight* — Scholl & Shelby, 1978.

*Footnotes* — Arnot, 1980.

*Healthwise Handbook* — Roberts, Tinker, & Kemper, 1979.

*Wholistic Dimensions in Health* — Kaslof, 1978.

*The Doctors' Case Against the Pill* — Seaman, 1980.

*Cesarian Childbirth* — Wilson & Hovey, 1980.

*Women Can Wait: the Pleasures of Motherhood After 30* — Schultz, 1979.

*The Vitamin Book* — Wentzler, 1979.

## Lange Medical Publications

*Current Medical Diagnosis and Treatment, 1981* — Krupp & Chatton, 1981.

*Review of Medical Microbiology, 14th Ed.* — Jawetz, Melnick & Adelberg, 1980.

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Please see following page for full prescribing information.

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Rectal Cream with Hydrocortisone Acetate

**Caution:** Federal law prohibits dispensing without prescription.

**Description:** Each Anusol-HC Suppository contains hydrocortisone acetate, 10.0 mg; bismuth subgallate, 2.25%; bismuth resorcin compound, 1.75%; benzyl benzoate, 1.2%; Peruvian balsam, 1.8%; zinc oxide, 11.0%; also contains the following inactive ingredients: dibasic calcium phosphate, and certified coloring in a hydrogenated vegetable oil base.

Each gram of Anusol-HC Cream contains hydrocortisone acetate, 5.0 mg; bismuth subgallate, 22.5 mg; bismuth resorcin compound, 17.5 mg; benzyl benzoate, 12.0 mg; Peruvian balsam, 18.0 mg; zinc oxide, 110.0 mg; also contains the following inactive ingredients: propylene glycol, propylparaben, methylparaben, polysorbate 60 and sorbitan monostearate in a water-miscible base of mineral oil, glyceryl stearate and water.

Anusol-HC Suppositories and Anusol-HC Cream help to relieve pain, itching and discomfort arising from irritated anorectal tissues. These preparations have a soothing, lubricant action on mucous membranes, and the antiinflammatory action of hydrocortisone acetate in Anusol-HC helps to reduce hyperemia and swelling.

The hydrocortisone acetate in Anusol-HC is primarily effective because of its antiinflammatory, antipruritic and vasoconstrictive actions.

**Indications and Usage:** Anusol-HC Suppositories and Anusol-HC Cream are adjunctive therapy for the symptomatic relief of pain, itching and discomfort in: external and internal hemorrhoids, proctitis, papillitis, cryptitis, anal fissures, incomplete fistulas, pruritus ani and relief of local pain and discomfort following anorectal surgery.

Anusol-HC is especially indicated when inflammation is present. After acute symptoms subside, most patients can be maintained on regular Anusol® Suppositories or Ointment.

**Contraindications:** Anusol-HC Suppositories and Anusol-HC Cream are contraindicated in those patients with a history of hypersensitivity to any of the components of the preparations.

**Warnings:** The safe use of topical steroids during pregnancy has not been fully established. Therefore, during pregnancy, they should not be used unnecessarily on extensive areas, in large amounts or for prolonged periods of time.

**Precautions: General:** Symptomatic relief should not delay definitive diagnoses or treatment.

Prolonged or excessive use of corticosteroids might produce systemic effects.

If irritation develops, Anusol-HC Suppositories and Anusol-HC Cream should be discontinued and appropriate therapy instituted.

In the presence of an infection the use of an appropriate antifungal or antibacterial agent should be instituted. If a favorable response does not occur promptly, the corticosteroid should be discontinued until the infection has been adequately controlled.

Anusol-HC is not for ophthalmic use.

**Pregnancy**

See "WARNINGS"

**Pediatric Use**

Care should be taken when using the corticosteroid hydrocortisone acetate in children and infants.

**Dosage and Administration:** Anusol-HC Suppositories—

Adults: Remove foil wrapper and insert suppository into the anus. Insert one suppository in the morning and one at bedtime for 3 to 6 days or until inflammation subsides. Then maintain comfort with regular Anusol Suppositories.

Anusol-HC Cream—Adults: After gentle bathing and drying of the anal area, remove tube cap and apply to the exterior surface and gently rub in. For internal use, attach the plastic applicator and insert into the anus by applying gentle continuous pressure. Then squeeze the tube to deliver medication. Cream should be applied 3 or 4 times a day for 3 to 6 days until inflammation subsides. Then maintain comfort with regular Anusol Ointment.

**NOTE:** If staining from either of the above products occurs, the stain may be removed from fabric by hand or machine washing with household detergent.

**How Supplied:** Anusol-HC Suppositories—boxes of 12

(N 0071-1089-07) and boxes of 24 (N 0071-1089-13) in silver foil strips with Anusol-HC printed in black.

Anusol-HC Cream—one-ounce tube (N 0071-3090-13) with plastic applicator.

Store between 59°-86°F (15°-30°C).

1089G010

**PARKE-DAVIS**

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Morris Plains, NJ 07950 USA

*Current Pediatric Diagnosis & Treatment, 6th Ed.* — Kempe, Silver & O' Brien, 1980.

*Physician's Handbook, 19th Ed.* — Krupp, Sweet, Jawetz, Biglieri, Roe & Camargo, 1979.

*Basic Histology, 3rd Ed.* — Junqueira & Carneiro, 1980.

*Review of Medical Pharmacology, 7th Ed.* — Meyers, Jawetz & Goldfien, 1980.

*Basic & Clinical Immunology, 3rd Ed.* — Fudenberg, Stites, Caldwell & Wells, 1980.

**Other Publishers**

*Profile of the Residency Trained Family Physician in the United States 1970-1979* — Geyman, Ed. (Appleton-Century-Crofts) 1981.

*Occupational Diseases* — Plunkett (Barrett) 1977.

*Financial Aid For Medical Students* — Lazar (Barron's) 1979.

*How to Prepare for the New MCAT* — Seibel & Guyer (Barron's), 1980.

*Help Your Doctor Help You* — Alvarez (Celestial Arts) 1976.

*Surgeon's Log (Novel)* — Mason (Christopher) 1980.

*What You Should Know About Medical Lab Tests* — Kliman, Vermette & Kolowrat (Crowell) 1979.

*History of Bacteriology* — Bulloch (Dover) 1979.

*Sniff, Sniff, Al-er-gee* — Frazier (Johnny Reads) 1978.

*Brain Surgeon: An Intimate View of His World* — Shainberg (Lippincott) 1979.

*Between You & Me* — Parrish, Gilchrest & Fitzpatrick (Little, Brown) 1978.

*Clear Skin* — Flandermeyer (Little, Brown) 1979.

*Skin Deep: The Making of a Plastic Surgeon* — Moynihan & Hartman (Little, Brown) 1979.

*Uses of Enzymes & Immobilized Enzymes* — Haselberger (Nelson-Hall) 1978.

*Electron Microscopy of the Kidney* — Mandal & Wenzl (Plenum) 1979.

*The Metabolic Management of the Critically Ill* — Wilmore (Plenum) 1977.

*Sodium in Medicine and Health: A Monograph* — Moses, Ed. (Reese) 1980.

*You Can Breastfeed Your Baby* — Brewster (Rodale) 1979.

*Everything You Always Wanted to Know About Nutrition* — Reuben (Simon & Schuster) 1978.

*Born at Risk* — Colen (St. Martin's) 1980.

*Having a Baby* — Trimmer (St. Martin's) 1980.

*Shock Trauma* — Franklin & Doelp (St. Martin's) 1980.

*Review of Allied Health Education: 3* — Hamburg, Ed. (University Press of Kentucky) 1979.

*The Journal of Modern History, Volume 49, No. 4* (University of Chicago Press) 1977.

*Understanding Neurologic Disease* — Warfel & Schlagenhauff (Urban & Schwarzenberg) 1980.

*The Future of Pharmaceuticals: The Changing Environment for New Drugs* — Bezold (Wiley & Sons) 1981.

*Mesmerism* (translation) (William Kaufmann) 1980.

*Microbial Diseases* — May, Ed. (William Kaufmann) 1980.

*Orthotics Etcetera, 2nd ed.* — Redford, Ed. (Williams & Wilkins) 1980.

### Miscellaneous

*Annual Review of Neuroscience, Volume 2* — Cowan, Hall & Kandel, Eds. (Annual Reviews) 1979.

*Enterstomal Therapy: Developing Institutional & Community Programs* — Gross & Baily (Nursing Resources) 1979.

*Women's Health Care* — Kowalski, Ed. (Nursing Resources) 1979.

*Physician Recruitment and the Hospital* — Olson (American Hospital Assn.) 1980.

*Mammography* (National Council on Radiation Protection & Measurements) 1980.

Letters to VOX DOX should be addressed to the Vox Dox Editor, Journal of the Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612.

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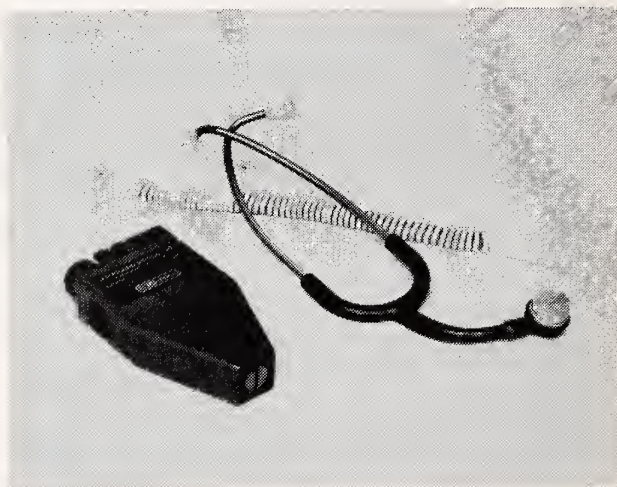
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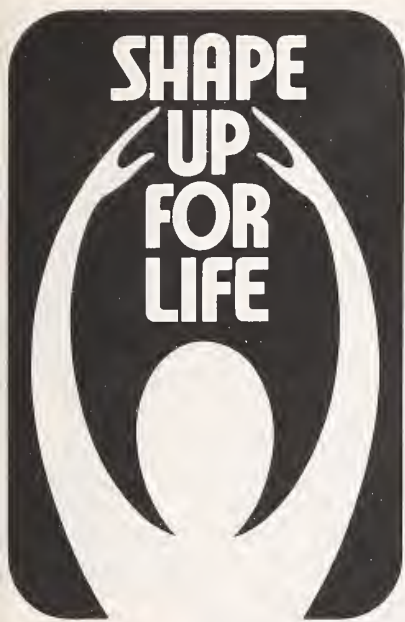
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# A U X I L I A R Y N E W S

## *An Open Letter to Kansas Physicians*

It is an honor to be in this position. I approach this year as president of the KMSA with a little fear and a lot of trembling. I want to do a good job, and with your help I know I will succeed.

In January, our then-president Evelyn Huff appointed me to represent our Auxiliary to the Kansas Council of Women. It was an enjoyable experience, and I met many intelligent, active women from across the state. The following is what I told them about us; you may wish to review these facts to refresh your memory.

The title of our organization is "The Kansas Medical Society Auxiliary," and we are an association of component auxiliaries. The purposes of the KMSA are exclusively educational and charitable. They are:

- To assist in the programs of the KMS, the AMA, and the AMAA to improve the health and quality of life for *all* people.
- To encourage participation of volunteers in activities that meet health needs.
- To promote health education.

- To coordinate and advise concerning activities of component auxiliaries.
- To support health-related charitable endeavors.

Thus we function as an arm or helping hand to the Kansas Medical Society.

Through AMAERF and related projects, we raise funds to aid in the education of medical students; we also provide memorial loan funds for nursing students and allied health careers.

We educate people in our communities through use of the Learning Center, which is a series of games, quizzes, exhibits, and materials concerning pollution of the body by drugs, tobacco, alcohol, and poor nutrition. These have been set up in fourth and fifth grade classrooms all over the state, and instructions and kits have been sold to several other states.

We have taught babysitting and CPR courses, and have presented programs on venereal disease, teenage pregnancy, drug abuse, legislation, and health careers.

We are concerned with international health, and last year Dee Cauble of Wichita was named Kansan of the Year in honor of her many years of work collecting bandages, equipment, and books to be sent to overseas missions.

We inform our members of pending medical and health legislation. We are proud that three of our members are now state legislators!

The KMS is listening to us. They have recently appointed Auxiliary member to several committees.

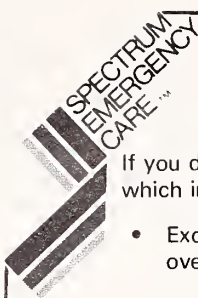
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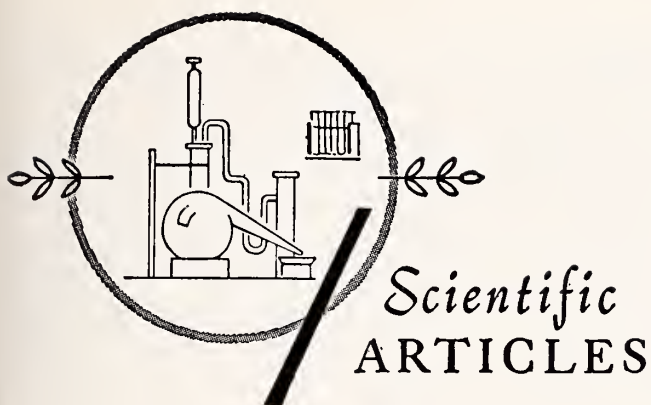
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# Intestinal Obstruction

## *Abdominal Ultrasonography for Diagnosis of Difficult Cases*

JOSEPH E. BOSILJEVAC, M.D.;\* PAUL B. HARRISON, M.D.;†  
SAM H. KOURI, M.D.‡ and BRADFORD F. REEVES, M.D.,‡ *Wichita*

ABOUT FIVE per cent of patients with acute intestinal obstruction will have no air fluid levels on plain abdominal radiographs.<sup>1</sup> This is due to fluid-filled loops of bowel in the absence of gas. Management may be further delayed by inability to perform or inaccuracy of contrast studies.<sup>2</sup>

Three patients were recently encountered with possible intestinal obstruction. Confirmatory evidence could not be established by flat and upright abdominal radiographs. Realtime ultrasonography with sector scanning provided a diagnosis and enabled appropriate surgical therapy to be carried out in each case.

### Case Reports

**Case One:** A 73-year-old female presented with abdominal pain associated with nausea and vomiting; she had passed no flatus or stool for 24 hours. Her past medical history was positive for congestive heart failure, and she had undergone mastectomy for breast cancer seven years earlier.

Examination revealed an elderly white female in

moderate distress. She had a distended abdomen with no bowel sounds and diffuse tenderness. Hemoglobin was 18.1 gm; hematocrit, 52%; white cell count, 19,800 with 5% band forms and 89% neutrophils. Plain abdominal radiographs revealed a gasless abdomen.

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**The use of realtime ultrasonography in diagnosis of patients with acute intestinal obstruction is discussed. This technique may be useful when abdominal x-rays are non-confirmatory.**

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The admission diagnosis included acute cholecystitis, pancreatitis, acute appendicitis, or diverticulitis. A sonogram was performed for possible gallbladder disease. This revealed numerous dilated loops of small bowel filled with fluid consistent with mechanical obstruction. Gastrografin swallow confirmed obstruction of the small bowel at midjejunum.

**Case Two:** A 34-year-old male presented with right lower quadrant pain of three weeks' duration. The pain was intermittent and cramping initially, but became constant four days prior to admission. It was associated with nausea but no vomiting. The patient had passed stools only with self-administered enemas. His past medical history included partial gastrectomy 14 years earlier, lysis of adhesions 13 years

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earlier, and appendectomy 20 years earlier.

Examination revealed a patient in marked discomfort. The abdomen was soft; bowel sounds were active; and there was pain with palpation in the right lower quadrant. Hemoglobin was 14.5 gms; hematocrit, 42%; white cell count, 7,500 with 56% neutrophils and 39% lymphocytes. Plain abdominal radiographs, upper gastrointestinal series with small bowel follow-through, and barium enema all yielded normal results. Sonogram revealed distended loops of small bowel with active peristalsis. Partial mechanical obstruction was found at operation.

*Case Three:* A 20-year-old female was admitted with abdominal pain. She was two weeks post cesarian-section and had been doing well at home until 24 hours prior to admission when she developed cramping pain and passed a large, loose stool. The pain persisted with no further bowel movements, and abdominal distention, nausea, and vomiting occurred. Past medical history was unremarkable except for the recent pregnancy.

Examination revealed a thin female in no acute

distress. The abdomen was soft with pain with palpation in both upper quadrants. High pitched bowel sounds with rushes were heard. White cell count was 20,100 with 84% neutrophils and 4 band forms. The hemoglobin was 12.1 gm/100 ml, and hematocrit, 37%. The initial diagnosis was pelvic abscess and possible intestinal obstruction. Plain abdominal radiographs did not confirm intestinal obstruction. A pelvic sonogram revealed multiple dilated loops of intestine with vigorous peristalsis in these loops.

## Discussion

Delay in diagnosis of intestinal obstruction may result in strangulation of the bowel. In many cases the clinical diagnosis of strangulated obstruction cannot accurately be made until actual necrotic bowel is present. Clinical information (symptoms, fever, tachycardia, abdominal tenderness, or rebound) and laboratory data (leukocytosis, hyperamylasemia) do not provide reliable diagnostic

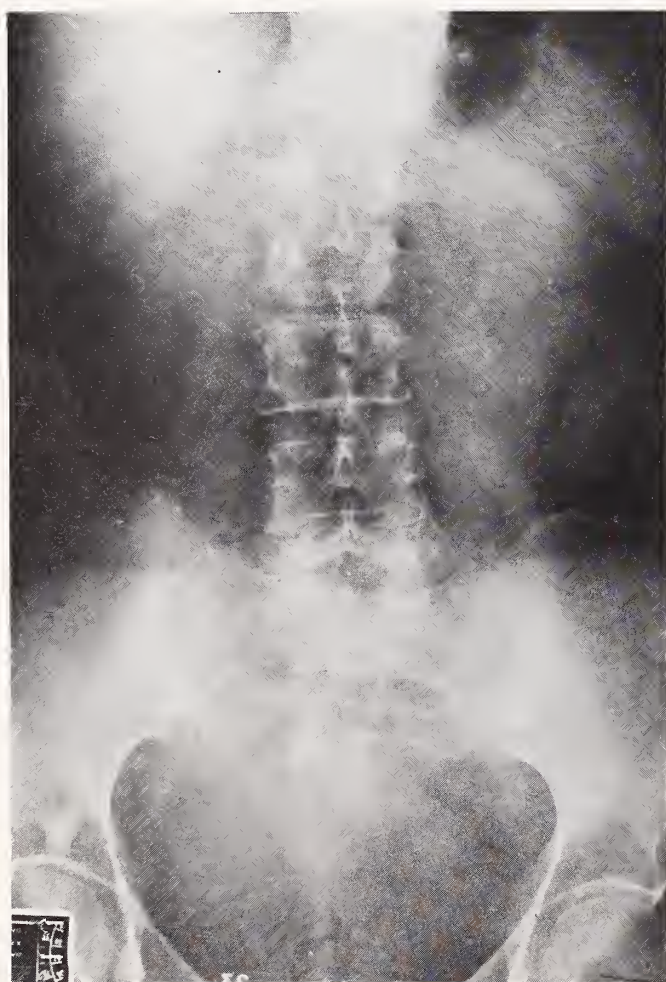


Figure 1. Typical appearance of the gasless abdomen and no air-fluid levels in the plain flat and upright abdominal radiograph.



criteria to distinguish simple mechanical from strangulation obstruction.<sup>3-5</sup>

Patients with intestinal obstruction classically present with crampy abdominal pain, vomiting, absence of flatus or stool, and abdominal distention. In the majority of cases, the use of physical examination and plain abdominal radiographs will provide a diagnosis so that appropriate therapy may be started.

Difficulty exists when another disease entity is present (*i.e.*, acute cholecystitis, pancreatitis) with associated ileus. Pelvic inflammatory disease may also cause a diagnostic dilemma. About 5 per cent of patients with intestinal obstruction cannot be accurately diagnosed on the basis of clinical history, physical examination, and plain abdominal radiographs.

Fluid-filled loops of bowel (*Figure 1*) may occur, especially if the bowel is fixed by adhesions. The absence of gas may be due to prolonged vomiting, nasogastric suction, or may occur in a closed loop obstruction. Strangulated obstruction or vascular disease resulting in infarction frequently present with fluid-filled loops of bowel and the absence of gas.

Sonographic waves are not transmitted through gas-filled intestine. However, realtime ultrasonography with sector scanning enables identification of fluid-filled bowel loops and can demonstrate visible peristaltic activity.<sup>6, 7</sup> The individual loop may appear smooth or slightly serrated, depending on the prominence of the valvulae conniventes (*Figure 2*). Individual loops of bowel may also be traced (*Figure 3*). No peristalsis may be seen with strangulated obstruction or massive mesenteric infarction, but many times the diagnosis of a fluid-filled mass may be identified as intestine.

In most cases of mechanical obstruction with air fluid levels the sonogram would visualize the fluid content of individual loops. That portion of the bowel containing air would give strong reflections from the anterior wall and the size of the lumen cannot be determined. However, in this situation the plain radiographs showing both air and fluid in the bowel would be diagnostic.

Correlating the sonogram, plain radiographs of the abdomen, and the clinical picture enabled a correct preoperative diagnosis of mechanical obstruction in our cases. This demonstrates the usefulness of ultrasonography as an adjunct in diagnosis of difficult cases of intestinal obstruction. Furthermore, information about biliary tract disease or pelvic problems (such as ectopic pregnancy or tubo-ovarian abscess) may be obtained during the examination if acute abdominal pain is present.

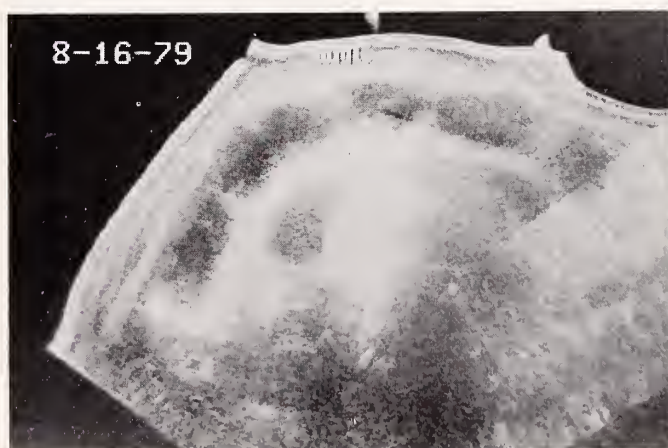
## References

1. Williams, J. L.: Obstruction of the small intestine. *Radiol. Clin. North Am.* 2:21, 1964.
2. Zer, M. *et al.*: The value of gastrografen in the differential diagnosis of paralytic ileus versus mechanical obstruction. *Dis. Colon Rectum* 20:573, 1977.

(Continued on page 215)



*Figure 2.* Serrated bowel wall consistent with the appearance of valvulae conniventes (realtime ultrasonogram with sector scanning).



*Figure 3.* Fluid-filled bowel loop identified by gray-scale ultrasonography.



# Antibiotic Prophylaxis

## *A Review of Timing and Selection*

RICK WINDLE, M.D.\* and GEORGE J. MASTIO, M.D.,† *Wichita*

PROPHYLACTIC antibiotics rationally selected and appropriately administered have a great deal to offer. The primary goal is to decrease the incidence of infection in operations with an established risk for infection. The second goal is to prevent infection where the results would be particularly critical, as in a vascular graft. The benefits are cost effective, saving hospital days and therefore patient costs. Properly used, they cause no apparent increase in the incidence of nosocomial infection. Following is a review of the timing, selection, and situations where prophylactic antibiotics are valuable adjuncts to therapy.

### Definition of Prophylaxis

In the strictest sense, prophylaxis implies preventive use of antibiotics where contamination might occur, but is not yet present. Most surgeons casually extend this concept to situations where contamination has occurred prior to surgery, as in penetrating wounds of the abdomen. In our opinion, this is acceptable, as many of the same principles apply. It is very important, however, for the surgeon to differentiate the use of medication in preventive fashion as opposed to treatment of active infection.

### Definition of Clinical Situations

*General Considerations.* The key to appropriate usage of prophylactic antibiotics is in defining the individual clinical situation correctly. This is done by evaluating the systemic and local parameters, and defining the wound status.

Systemic parameters are generally reflective of the status of the patient at the time of operation. Common clinical conditions associated with an increased risk of infection due to a generalized systemic disease process include diabetes, corticosteroid

therapy, thermal injury, alcoholism, and protein-calorie malnutrition. The age of the patient also directly relates or influences the wound infection rate. The rate of infection rises steadily from the

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**Antibiotic prophylaxis is in a continuing state of evolution. In this paper, we carefully define antibiotic prophylaxis; review the systemic and local parameters; and define wound status. The microflora encountered in selected situations are considered, and antibiotic timing and selection are reviewed.**

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second through the eighth decades. Race and sex play a minor role. Of all metabolic and nutritional conditions, obesity has the greatest effect, producing a high rate of infection. The duration of pre-operative hospitalization influences the rate of infection adversely. This may be due to the greater virulence of organisms present in the hospital environmental reservoir. The duration of operation appears to be a primary determinant of the risk of infection, the rate rising steadily as the duration of the procedure increased. The previously stated clinical conditions set into play the systemic factors that predispose to infection. These systemic factors include hypoxia, distant trauma, remote infection, hypovolemia, endotoxemia, and decreased immunocompetence. These systemic conditions can be a result either of chronic disease or an acute disease process, such as trauma.

Local parameters that favor infection include decreased blood supply, dead space, hematoma, or foreign body.

Accurately defining the status of the wound is an essential ingredient in defining the need for prophylactic antibiotics. William R. Sandusky has reviewed the classification of wounds. Clean wounds are those that occur under ideal circumstances. No entry is made into the respiratory, alimentary, genito-urinary systems, or oropharynx. No inflammation is encountered and there is no break in technique. The situation is usually that of an elective case that is closed primarily with no drainage.

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Clean-contaminated wounds are those that enter the oropharynx, the respiratory tree, or gastrointestinal tract, but without significant spillage. Included in this are operations that transect the appendix or the cystic duct; those that enter the biliary, urinary, or lower genital tract; or those in which minor breaks in technique occur. Contaminated wounds are those in which gross spillage occurs from the gastrointestinal tract, those that enter the genital, urinary, or biliary tracts in the presence of infected urine or bile, or fresh traumatic wounds. Dirty wounds are old traumatic wounds or those involving clinical infection or perforated viscera. These wounds frequently contain devitalized tissue and foreign bodies. Included in the above would be a wound created for abscess drainage.

With the preceding considerations in mind, we can begin to formulate a list of situations in which preoperative parenteral prophylactic antibiotics may be of value. This would include the following cases: all obviously contaminated and dirty wounds; all cases in which the bronchial tree, the gastrointestinal tract, or the genital urinary tract are opened; certain patients with otherwise clean wounds in whom results of infection would be especially grave, such as in neurosurgical or cardiac operations; all cases in which prosthetic materials are implanted; all cases in which there is a vascular suture line; and all cases in which the patient has associated serious systemic illness or is being treated with drugs known to increase the risk of sepsis.

*Specific Considerations.* It is worthwhile to comment on some individual situations and the microflora involved. This has been well reviewed by Dr. Thadepalli. The stomach is relatively sterile. The low pH of the stomach determines the bacterial count. It is important to point out that after duodenal or gastric perforation and the ensuing peritoneal burn, there is a rapid increase in bacterial colonization. In the small intestine the predominant organisms are gram negative cocci and lactobacilli in concentrations generally less than  $10^4$  colon forming units/ml. *Streptococcus* and *Enterococcus* constitute the major components of the flora of the small bowel. Gram negative bacilli are not common in the upper part of the small bowel except in patients with malnutrition, alcoholism, and other states that may raise the pH of the stomach. Anaerobic bacteria are infrequent in the duodenum and jejunum. A variety of anaerobic bacteria may be found in the ileum. These are mostly *Bacteroides* and *Clostridia*. Coliform organisms are the aerobes most frequently found in the ileum.

The cecum harbors  $10^{10}$  viable bacteria/gm of

feces and the bacteria constitute nearly 20 per cent of the fecal mass. Only 5-10 per cent of that fecal mass is composed of coliforms or other facultative bacteria. Ninety to ninety-five per cent of the bacterial count of the colon consists of obligate anaerobes which include *Bifido* bacteria, *Bacteroides*, *Eubacteria*, *Peptostreptococci*, *Clostridia*, and others. The fecal flora may change with diet.

The hepatobiliary system is relatively sterile. It too may vary with diet.

The microflora involved with hysterectomy include predominantly *E. coli* with contributions of the anaerobic bacteria which include *Bacteroides fragilis*, *Clostridia*, and *Peptostreptococci*.

*Staph. aureus* is reported to be the most common pathogen encountered in vascular and orthopedic surgery.

Microflora commonly encountered in the upper respiratory tree include aerobic gram positive organisms and anaerobes sensitive to penicillin. In compromised individuals, colonizations of gram negative organisms occur including *Hemophilus influenzae* and *Strep. pneumoniae*.

### Timing and Selection

We have identified the clinical situations in which antibiotic prophylaxis should be considered, and the commonly encountered microflora have been reviewed. The next important point is that of the correct timing of administration. The timing of administration is probably more important than the actual selection of the medication. The following basic dictums apply to all prophylactic antibiotics and have been confirmed by numerous studies. The antibiotic must be administered prior to the beginning of the operation so that adequate serum concentrations are existent. This means that they must be administered intramuscularly approximately one hour prior to arrival in the operating room or they must be administered intravenously, preferably before induction of anesthesia. From our observation, this is the most commonly abused aspect of this procedure. It is unfortunate because it is now well documented that there is very little if any benefit from the use of antibiotics once contamination has occurred. The second important point about administration is the need to maintain adequate serum and tissue levels. Not only must the antibiotic get to the tissue, but the level must be such that it will inhibit proliferation of the bacteria. An example of abuse here is in the case of cephalothin. Its half life is 25-30 minutes and many pharmacologists feel that adequate tissue levels are maintained for only two to three hours. Patients who receive the antibiotic prior to surgery



often will not receive an additional dose during the operation or in the recovery room. By the time they get the next dose of medication, 8-10 hours may have elapsed. Prophylaxis will not be as effective in this circumstance. The third important point is the need for short term administration only. The most common time interval appears to be 24-48 hours. Short term administration allows for the largest cost savings. This is two-fold. Obviously if one uses less antibiotic for a shorter period of time this saves money. The hidden cost savings in the short term administration is in decreasing or preventing the development of nosocomial infections. It is now well-known that 40 per cent of all hospital-acquired infections are nosocomial in origin. It is also well delineated that these are the most costly and difficult kinds of infections to treat.

Dr. Harlan Stone has outlined the primary considerations in selecting preventive antibiotics: (1) A reported as well as an individual hospital experience, confirming specific antibiotic effectiveness against the anticipated pathogens; (2) A lack of toxicity and rare allergic reactions; (3) A tissue distribution that will permit the antimicrobial agent to reach those body areas with a known predilection for postoperative infection and in a concentration known to be effective; (4) An established time-dose relationship that will insure antibiotic tissue levels at the time of anticipated contamination; (5) An elimination of all antimicrobial agents that presently serve or have no immediately available substitute as a first choice antibiotic for the most usual postoperative infections; and (6) Expected cost of the preventive drug therapy for each antibiotic.

Using Dr. Stone's criteria for selecting the appropriate antibiotic, let us now review the properties of some of the commonly used medications in prophylaxis. Of the cephalosporins, cefazolin is a particularly popular one. It appears to have serum and tissue levels greater than or equal to cephalothin. It has a long serum half life and it can be administered to adults every 6-8 hours in doses of 500 mg. As with most cephas, it concentrates well in the biliary system. It inhibits both gram negative and gram positive organisms. Cefazolin and other popular cephas are generally ineffective against *Bacteroides* and *Enterococci*. The exception to this is the new cephamycin, cefoxitin. It has essentially the same spectrum as the cephalosporins excepting that it is potent against approximately 85 per cent of *Bacteroides fragilis*. This makes it a medication that works well in the lower small bowel and colon. Cephas in general have a great deal to recommend themselves in antibiotic prophylaxis. They have the

properties of good serum and tissue concentrations, relatively low cost, and relatively low toxicity. At present they are commonly used in upper gastrointestinal and biliary surgery, surgery on the respiratory tract, cardiac surgery, vascular surgery, and orthopedic operations.

Clindamycin is an antibiotic that is concentrated well in the liver although it concentrates poorly in the biliary tree. It is sometimes used because of its activity against *Bacteroides fragilis*. It is a potent antibiotic that does not have the well known side effect of colitis. It may be well to save this medication for specific situations other than prophylaxis.

Another popular prophylaxis antibiotic is carbenicillin. It works well against anaerobic bacteria including *Bacteroides fragilis*. It is also particularly potent against *Pseudomonas*, especially in the urinary tract. When combined with an aminoglycoside it is synergistic in its action against *P. aeruginosa*. It has been used successfully to treat mixed aerobic and anaerobic infections of the lung, abdomen, and pelvis. An item that weighs against its use as a prophylactic antibiotic is its large expense. In addition, its good *Pseudomonas* activity makes it prudent to save this for a specific infection. *Pseudomonas* is not ordinarily a potent or difficult pathogen to deal with in healthy individuals. In the debilitated individual, it may well cause life-threatening infection.

The aminoglycosides are commonly used by many general surgeons. They too have problems with toxicity and their potency is such that they must be used carefully as a prophylactic antibiotic, especially in the hypovolemic patient.

Metronidazole in its intravenous form is now available on the American market. It has been shown to be effective against anaerobic bacteria and may have some place in lower gastrointestinal tract antibiotic prophylaxis.

If one carefully evaluates the patient, the anticipated surgical procedure, the likelihood of contamination and the consequences of infection, one may then rationally choose the correct situation for prophylactic antibiotics. Thorough knowledge of the microflora involved will allow selection of the correct antibiotic. Administration of that antibiotic preoperatively and for a short time thereafter should result in an overall decrease in the incidence of infection.

## Conclusion

Antibiotic prophylaxis is in a continuing state of evolution. We have reviewed the considerations and  
(Continued on page 232)

# Mesenteric Arterial Thrombosis

## *A Late Complication Following Aortic Repair*

VINCENT S. SHEN, M.D. and ERICH W. POLLAK, M.D., *Kansas City, Missouri*

ABDOMINAL AORTIC reconstruction with prosthetic grafts was followed by an early patency rate of 99 per cent. However, long-term postoperative follow-up showed that only 66 per cent of grafts were patent after five years.<sup>1</sup> Perfection of surgical technique and graft materials have minimized the possibility of early graft obstruction, whereas progression of atherosclerosis continued to be the most frequent cause for late graft failure.<sup>2</sup> Proximal and distal propagation occurred after graft obstruction and were responsible for most of the symptoms of these patients. Recurrent painful intermittent claudication of lower extremities indicated possible distal propagation of obstruction, while renal failure suggested the relatively rare occurrence of proximal extension of obstruction.<sup>3</sup> A review of the literature showed no reports of clinical findings related to the involvement of more proximal visceral arteries. Reported here are occurrences of massive small bowel gangrene due to vascular occlusion by proximally propagating aortic graft thrombosis, occurring several years after initially successful operations.

### Materials and Methods

During a review of 500 consecutive autopsies of patients who died at the Truman Medical Center during the four-year period 1974-1978, four instances of abdominal aortic graft obstruction were encountered. In two patients, the aortic graft obstruction was only an incidental finding, not related to the cause of death, whereas the remaining two patients died as a direct consequence of acute arterial mesenteric insufficiency due to propagating thrombosis from occluded aortic grafts.

*Case One:* A 74-year-old male was admitted in November 1976 for treatment of acute exacerbation of long standing chronic obstructive pulmonary disease. Abdominal aortic dacron interposition graft had been placed in 1959 for treatment of Leriche

Syndrome. Postoperative relief of symptoms persisted until 1972, when a certain degree of intermittent claudication of lower extremities reoccurred. Concomitant pathology included arterial hypertension, arteriosclerotic cardiovascular disease, and congestive heart failure.

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**Two elderly patients, hospitalized for treatment of severe unrelated disease, experienced proximally extending aortic thrombosis leading to mesenteric infarction and death. This resulted from small bowel gangrene, and occurred several years after initially successful abdominal aortic revascularization. Awareness of the possibility of such late complications of aortic repair is essential for prompt lifesaving therapeutic attempts in similar patients.**

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Physical examination corroborated the presence of emphysema and chronic bronchitis. Abdominal auscultation disclosed normal bowel sounds, but a previously detected midabdominal vascular bruit was no longer present. Moreover, there was mild right and left upper quadrant tenderness to palpation but no rebound tenderness or muscular guarding. Initial laboratory results included: electrocardiogram — old anterior myocardial infarction, left axis deviation and left bundle branch block; chest x-ray — emphysema; arterial blood gases —  $pO_2 = 41.6$  mmHg,  $pCO_2 = 56.8$  mmHg,  $pH = 7.47$ , and  $HCO_3 = 40.3$  meq/L; complete blood cell count, serum electrolytes, and urine analysis were within physiological limits.

Initial treatment consisted of oxygen therapy, intravenous aminophyllin, terbutaline, cardiotonics, diuretics, and antibiotics. Slight clinical improvement occurred during the next 24 hours, but tachycardia persisted. Mental confusion developed. Hyponatremia and hypochloremia were detected and were not corrected by free water restriction or saline administration. During the following two days, mental confusion increased. Abdominal tenderness extended to the lower quadrants, muscular guarding

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appeared, and bowel sounds became depressed. Abdominal x-ray pictures were described as showing a non-specific ileus without free intraperitoneal air. A significant anion gap of 33.2 meq/L developed. Other laboratory findings included a leukocytosis of 23,000/cu mm and hyperamylasemia of 283 UI/L. Signs of peritonitis and septic shock rapidly developed. Antibiotics, aminoglycosides, intravenous fluids and dopamine did not alter his moribund condition and diagnostic celiotomy, performed ten hours after clinical onset of sepsis, showed infarction of the small bowel from the ligament of Treitz to the sigmoid colon. No resection was attempted and the patient died 12 hours after operation.

At autopsy, thrombosis of the aortic graft was found. It extended distally into the aortic bifurcation and proximally up to the level of the celiac axis. The initial portion of the superior mesenteric artery was obstructed by the thrombus. Early hemorrhagic infarction of the small bowel was present. Additional findings included generalized atherosclerosis, old myocardial infarction, nephrosclerosis, and bullous emphysema.

*Case Two:* A 71-year-old male was admitted for treatment of congestive heart failure. Abdominal aortic repair with dacron interposition graft had been performed at another hospital many years earlier. Intermittent painful claudication of lower extremities reappeared and had been present for more than three years. The patient had been hospitalized numerous times for treatment of angina pectoris and congestive heart failure.

At the time of the admission in question, examination findings included: arterial blood pressure, 170/90 mmHg; pulse, 90 beats/min; respirations, 32/min; bilateral chest rales; cardiomegaly; distant heart sounds; gallop rhythm; mild systolic ejection murmur along the left sternal border; jugular venous distention; hepatojugular reflux; and decreased femoral pulses. There were no pathological abdominal findings. Abnormal laboratory findings included: total serum protein, 5.6 gm/100 ml; serum potassium, 3.2 meq/L; serum creatinine, 2.6 mg/100 ml; and electrocardiogram, left ventricular hypertrophy, nonspecific ST and T wave changes, and multiple premature ventricular contractions. Chest x-ray revealed cardiomegaly and pulmonary vascular redistribution consistent with congestive heart failure.

Oxygen therapy, coronary vasodilators, diuretics and oral digitalis were started, but only slight improvement of cardiac function occurred. Three days after admission the patient awoke confused, agi-

tated, and tachypneic. There was generalized malaise and diffuse abdominal pain. The abdomen was also diffusely tender to palpation, but there was no muscular guarding. He became lethargic and hypotensive, and abdominal tenderness increased. Chest and abdominal x-ray series at that time yielded non-specific findings. White blood cell count was 19,400 cells/cu mm; anisocytosis, poikilocytosis, burr cells, and schistocytes were present in the red blood cell count; and there was hyponatremia and profound metabolic acidosis. Blood samples obtained and cultured at this time subsequently developed growth of *Bacteroides Fragilis*. Nonoperative treatment consisting of intravenous fluids, antibiotics, and high doses of corticosteroids was ineffective, and death occurred shortly thereafter.

At autopsy, there was a thrombosis of the aortic graft, extending downward into the common iliac arteries and upward into the superior mesenteric artery and left renal artery. There was extensive small bowel infarction but only slight ischemic changes in the left kidney.

### Comments

Three different mechanisms for production of mesenteric arterial insufficiency after abdominal aortic repair have been previously reported:

1. Early failure: Due to surgical interruption of the inferior mesenteric artery in patients with concomitant superior mesenteric artery and celiac artery insufficiency.<sup>4, 5</sup>

2. Early failure: Circulatory steal to the lower extremities through the repaired aorta, compromising further a previously decreased mesenteric circulation.<sup>6</sup>

3. Late failure: Progression of obstructive atherosclerotic disease in the superior mesenteric artery and celiac artery after aortic repair.<sup>7</sup>

To these three well known mechanisms a fourth one has now been added: Superior mesenteric and celiac artery obstruction by propagating thrombosis originating in an obstructed aortic graft.

Both of our patients were in the eighth decade of life, and were admitted to the hospital with serious illness unrelated to their aortic obstruction. Symptoms of intestinal ischemia began while they were hospitalized, but were unrecognized as such because the magnitude of the cardiorespiratory failure distracted the attention of the physician away from the abdominal findings. The disappearance of a known abdominal vascular bruit, fainting of femoral arterial pulses, and abdominal tenderness could have suggested possible development of an abdominal vascu-

lar catastrophe. This possibility was further strengthened in one of the patients by development of arrhythmia, a condition known to produce up to 33 per cent decrease of mesenteric blood flow.<sup>8</sup> Moreover, in each patient, therapeutic maneuvers were necessary to correct the cardiorespiratory failure at the expense of a further decrease of mesenteric blood flow, such as digitalis administration which can lead to an 82 per cent reduction in mesenteric blood flow.<sup>9</sup> Sympathomimetic drugs such as terbutaline and dopamine may have similar effects and were also given to these patients. The above considerations illustrate the dilemmas confronting the physician directing the management of these patients and the necessity for awareness of possible intestinal ischemia when such medications are used in elderly critically ill patients.

The primary role of obstructing thrombosis in the pathogenesis of the intestinal ischemia in both patients was quite clear. The adjuvant role of splanchnic vasoconstriction due to medication cannot be ruled out. Failure to recognize and treat intestinal ischemia within the first six hours may lead to irreversible lesions,<sup>10</sup> thus every attempt should be made to insure the viability of the small bowel if no immediate diagnostic celiotomy can be performed. If arteriography is made, the transaxillary route is preferred because abdominal aortic obstruction precludes the use of the femoral approach to visualize visceral arteries.<sup>11</sup> When arteriography cannot be performed, noninvasive methods such as ultrasonic scanning and computerized axial tomography can be used without additional risk to these critically ill patients.

Although a dramatic improvement of the mortality rate for this condition is unlikely because of the severe condition, multiple organ failure and advanced age of these patients, the only hope of some occasional therapeutic success is in a high index of awareness of this complication, prompt corroboration of diagnosis, and reestablishment of mesenteric blood flow. Since Dubost performed the first abdominal aortic repair in 1961, it has become evident that even with the best technique and using the best prosthetic materials, aortic patency may not persist forever. Atherosclerosis itself cannot be thought of as an isolated event either. Surgical correction of lesions may provide momentary relief but is no guarantee against local recurrence of obstruction or progression of the disease elsewhere. Operated patients should be carefully monitored and periodically reassessed for the rest of their lives, and the possibility of vascular complications must be considered

when due either to concomitant disease or certain medications, vascular flow is decreased.

## References

1. Malone, J. M.; Moore, W. S. and Goldstone, J.: The natural history of bilateral aortofemoral bypass grafts for ischemia of lower extremities. *Arch. Surg.* 110:1300-1306, 1975.
2. Mozersky, D. J.; Sumner, D. J. and Stradness, D. E.: Long term results of reconstructive aortoiliac surgery. *Am. J. Surg.* 123:503-509, 1972.
3. Hobson, R. W.; Rich, N. M. and Fedde, C. W.: Surgical management of high aortoiliac occlusion. *Am. Surg.* 41:271-280, 1972.
4. Young, J. R. and LeFevre, F. A.: Complications of abdominal aortic surgery. *Arch. Surg.* 86:52-57, 1963.
5. Rob, C. and Snyder, M.: Chronic intestinal ischemia: A complication of surgery of the abdominal aorta. *Surgery* 60:1141-1145, 1966.
6. Lancaster, J. R. *et al.*: Aortoiliac steal syndrome and necrosis of the gastrointestinal tract. *Arch. Surg.* 94:172-174, 1967.
7. Gonzalez, L. L. and Jaffe, M. S.: Mesenteric arterial insufficiency following abdominal aortic resection. *Arch. Surg.* 93:10-20, 1966.
8. Britt, L. G. and Cheek, R. C.: Nonocclusive mesenteric vascular disease; Clinical and experimental observations. *Ann. Surg.* 169:704-711, 1969.
9. Levinsky, R. A. *et al.*: Digoxin induced intestinal vasoconstriction: The effects of proximal aortic stenosis and glucagon administration. *Circulation* 52:130-136, 1975.
10. Bonakdarpour, A. *et al.*: Superior mesenteric artery occlusion in dogs: A model to produce the spectrum of intestinal ischemia. *Ann. Surg. Res.* 19:251-257, 1975.
11. Thompson, W. M. *et al.*: Late complications of abdominal aortic reconstructive surgery. *Ann. Surg.* 185:326-334, 1977.

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## Intestinal Obstruction

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3. Bryk, D.: Strangulating obstruction of the bowel: A re-evaluation of radiographic criteria. *Am. J. Roentgenol. Radium Ther. Nucl. Med.* 130:835, 1978.
4. Shatila, A. H. *et al.*: Current status of diagnosis and management of strangulation obstruction of the small bowel. *Am. J. Surg.* 132:299, 1976.
5. Leffall, L. D. and Syphax, B.: Clinical aids in strangulation intestinal obstruction. *Am. J. Surg.* 120:756, 1970.
6. Pon, M. S. *et al.*: Ultrasound demonstration of radiographically obscure small bowel obstruction. *Am. J. Roentgenol. Radium Ther. Nucl. Med.* 133:145, 1979.
7. Scheible, W. and Goldberger, L. E.: Diagnosis of small bowel obstruction: The contribution of diagnostic ultrasound. *Am. J. Roentgenol. Radium Ther. Nucl. Med.* 133:685, 1979.



# Zollinger-Ellison Syndrome

## *Streptozotocin Therapy for Metastatic Gastrinomas*

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STREPTOZOTOCIN isolated from *Streptomyces achromogenes*, is a broad spectrum antibiotic that has received clinical recognition during the past decade as a chemotherapeutic agent for malignant pancreatic apudomas. Its tumoricidal effect stems from its ability to inhibit DNA synthesis and its selective action on the pancreatic insulin-secreting Beta islet cell.<sup>1</sup>

Murray-Lyon *et al.* were among the first to apply streptozotocin (STZ) clinically by successfully treating a malignant islet cell apudoma that produced insulin, gastrin, and glucagon.<sup>2</sup> Its effect in decreasing the production of these polypeptides with concomitant reduction in size of hepatic metastases prompted other studies using streptozotocin to mitigate the effects of malignant apudomas, such as gastrinomas, insulinomas, vipomas, glucagonomas, somatostatinomas, and more rare pancreatic endocrine tumors.

### Gastrinoma

Ruffner reported the first successful treatment of a malignant gastrinoma in a patient with Zollinger-Ellison syndrome using streptozotocin and 5-fluorouracil.<sup>3</sup> The tumor response was reported as a disappearance of the epigastric mass, improvement of liver function, and reduction of serum gastrin to levels one-third that of pre-treatment. The patient was in remission for two years without further treatment. Stadil *et al.* reported two cases of malignant gastrinoma that responded favorably to STZ therapy.<sup>4</sup> They recommend that patients with advanced metastatic gastrinoma be given a trial with

the drug. Cryer and Hill observed clinical and biochemical responses to STZ treatment in patients with metastatic mixed pancreatic apudomas.<sup>5</sup>

### Insulinoma

The most widely recognized malignant apudoma treated with streptozotocin has been the insulinoma.

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**Five patients with metastatic gastrinomas of the Zollinger-Ellison syndrome were treated with streptozotocin. Although none achieved complete remission, four showed favorable biochemical response. In this series, selective intra-arterial administration was safer and more effective than the intravenous route.**

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Broder and Carter report the largest series to date in which 52 patients with metastatic islet cell carcinoma were treated with STZ.<sup>6</sup> Their results show a 64 per cent biochemical response and a 50 per cent clinical response. An increase in the one-year survival rate and a doubling of the median survival time were shown for the responders as compared with nonresponders. The best results were seen in patients with islet cell carcinomas. Awrich *et al.* studied 76 patients with respect to several chemotherapeutic agents for adenocarcinoma and islet cell carcinoma of the pancreas.<sup>7</sup> Eight patients with islet cell carcinoma were treated with combination therapy of STZ, 5-FU and tubercidin, and were evaluated separately. Three of the eight patients responded favorably to the therapy and no tumors progressed during a period of four years on the study.

### Diarrheogenic Apudomas (Vipomas)

In patients with Verner-Morrison syndrome or "pancreatic cholera," according to a study by Bloom, Polak and Pearse, by the time diagnosis was established about one-half of the tumors had metastasized.<sup>8</sup> Streptozotocin has been reported to be effective in the treatment of these tumors in which

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the most likely polypeptide elaborated is vasoactive intestinal peptide (VIP). While the life expectancy of untreated patients with diarrheogenic tumors is a matter of months, remissions of several years have occurred following treatment with streptozotocin.<sup>9</sup>

### Glucagonoma

Combined chemotherapy (STZ and dacarbazine citrate [DTIC]) has been employed in the treatment of a patient with a malignant glucagonoma. Kessinger described an apparent reduction of tumor size with STZ while DTIC was used to control rash, glossitis, and diarrhea that were nearly incapacitating to the patient.<sup>10</sup> Addition of DTIC to the treatment provided the patient with a clinical as well as a chemical remission. Danforth *et al.* report complete remission in two patients with malignant glucagonoma syndrome using STZ alone.<sup>11</sup> A patient with neurological involvement in the glucagonoma syndrome responded favorably to combination chemotherapy of STZ and 5-FU.<sup>12</sup>

### Somatostatinoma

Only a few instances of pancreatic somatostatinoma have been described. Pipeleers *et al.* reported that STZ reduced tumor volume and hypersomatostatinemia in a patient with this malignant tumor, suggesting that the chemotherapeutic agent may be useful in treatment of disseminated somatostatinoma.<sup>13</sup>

### Other Apudomas

DeWys *et al.* described a patient with metastatic islet cell carcinoma in whom there was clinical and laboratory evidence of excessive secretion of a parathyroid hormone-like substance.<sup>14</sup> After streptozotocin treatment, the serum calcium level fell to hypocalcemic levels while the tumor remained in partial remission for 14 months. The relatively new circulating candidate hormone — pancreatic polypeptide (hPP) — has been found to successfully detect pancreatic apudomas even in asymptomatic members of families afflicted with multiple endocrine adenopathy, type I (MEA,I).<sup>15</sup> An apparently complete remission of hepatic metastases from a previously resected pancreatic polypeptide apudoma following streptozotocin therapy, administered both intra-arterially and intravenously, has been observed but not yet reported.

### Carcinoid Tumors

Results of treatment with streptozotocin for malignant carcinoid tumors have varied. Schein *et al.* found no objective response in four patients,

while Chernicoff *et al.* observed a 20 per cent response rate.<sup>16, 17</sup> Dilawari and Douglass, however, have reported that five of seven patients treated with STZ for malignant carcinoid tumor appear to have benefitted from its use.<sup>18</sup> Four of the five demonstrated prolonged remissions of at least two years.

Because of streptozotocin's chemotherapeutic specificity for the pancreas, the majority of investigations revolve around metastatic neoplasms of this organ and similar metastatic carcinoid tumors of the gastrointestinal tract. Additional experience with STZ in the treatment of five patients with metastatic pancreatic gastrinomas in the Zollinger-Ellison syndrome, of both sporadic and genetic varieties, are described here.

### Clinical Reports

**Case One:** A 54-year-old white male first presented to the Kansas University Medical Center in 1955 with typical clinical findings of Cushing's syndrome. A right adrenalectomy was performed for an adrenal cortical adenoma. From 1957-1961 he suffered recurrent bouts of ulcer disease refractory to medical management, and a diagnosis of Zollinger-Ellison syndrome within the MEA,I complex was made, based also on a positive family history. In 1961 he had a total gastrectomy with excision of metastatic non-Beta islet cell carcinoma (gastrinoma) involving peripancreatic lymph nodes, liver, duodenum, and mediastinum. Later that year the patient had a thoracotomy for excision of a right pulmonary metastasis. A regression of non-excised liver metastases was observed, lasting six years, when a recurrent non-resectable mediastinal metastasis was biopsied. For this, in 1968, a hypophysectomy was done in an attempt to control metastases; this was followed by a decrease in the size of the metastatic nodule. Three years later when neck and mediastinal metastases recurred, the patient was started on STZ therapy (2-2.6 gm intravenously/week) for a total of nine courses. During this time the serum gastrin concentration fell from 2,000 to 450 pg/ml. While on STZ therapy he developed 3+ proteinuria and the creatinine clearance was reduced from 40 to 20 mg/min; consequently the drug was discontinued. Approximately one year later there was evidence of recurrent and progressive tumor at which time the patient was admitted to the hospital and treated with total parenteral nutrition and increased doses of steroids, but he continued to follow a downward course and died 18 years after the clinical onset on his endocrinopathies.

**Case Two:** In 1977, a 47-year-old white male complained of relentless abdominal pain, vomiting,



diarrhea, and a 20 pound weight loss. Upper gastrointestinal barium studies demonstrated multiple esophageal, gastric and duodenal ulcers, seen also by endoscopy. Gastric intubation revealed a total gastric volume of 3-4 liters/day and the basal acid output was 25 mEq/hr. Serum gastrin concentrations ranged from 1800-2400 pg/ml. The patient was placed on cimetidine, 600 mg/6 hrs, and showed improvement during the ensuing days. His weight increased from 118 to 138.5 pounds, and symptoms of ulcer disease declined. However, a liver/spleen scan revealed two focal hepatic defects. Needle liver biopsy revealed malignant non-Beta islet cell carcinoma. The overall condition of the patient improved, and repeat endoscopy showed healing of all ulcers except one duodenal ulcer. The patient continued cimetidine medication 600-900 mg/6 hrs. Two years later the patient developed right shoulder pain and epigastric distress. Physical examination revealed a mass palpable in the epigastrium. The serum gastrin concentration was now 20,000 pg/ml; alkaline phosphatase, 649 IU; and urinalysis revealed 2+ hematuria, 1+ proteinuria, and urobilinogen 1.0. Abdominal CT scan now demonstrated a calculus in the left renal pelvis, progression of hepatic metastases, and enlargement of the tail of the pancreas. Because the patient had shown interval worsening, surgical consultation was requested. The patient agreed to surgical treatment which included total gastrectomy with esophagojejunostomy, jejunojejunostomy en Roux Y, distal pancreatectomy, left hepatic lobectomy, and placement of a catheter in the hepatic artery. Postoperatively there were complications of a temporary biliary fistula and a fungemia secondary to a hyperalimentation catheter, during which time the hepatic artery catheter became occluded by thrombus and was removed. He was treated with appropriate antibiotics and fistula repair. After recovery streptozotocin, 500 mg/day was administered intravenously for five days with nausea being the only side effect. This course of STZ chemotherapy is being repeated monthly without evidence of nephrotoxicity. One year after beginning the specific chemotherapy, the serum gastrin concentration has diminished to a level of 10,000 pg/ml; the hepatic involvement decreased slightly on successive isotopic and CT scans. The patient has recently developed hypercalcemia consistent with his past history of a renal stone and is being prepared for subtotal parathyroidectomy. He is now considered to be the mutant progenitor of a family with MEA,I.

*Case Three:* A 72-year-old white female presented at the University of Kansas Medical Center complaining of abdominal pain and diarrhea. Serum

gastrin concentration was 7,650 pg/ml, and abdominal CT scan revealed a pancreatic mass with multiple hepatic defects. An upper gastrointestinal series demonstrated multiple ulcers in the duodenum. A presumptive diagnosis of metastatic pancreatic gastrinoma was made. Palliative cimetidine therapy (600 mg/6 hrs by mouth) was begun with symptomatic relief. Intra-arterial streptozotocin (1 gm) was administered through the celiac axis via a percutaneous transfemoral artery approach. The patient tolerated the procedure well and with the exception of transient nausea and vomiting, there were no complications. Two weeks later the serum gastrin level was 3,050 pg/ml. A repeat CT scan showed no interval change in the hepatic or pancreatic lesions. The patient was discharged and followed on an outpatient basis with monthly evaluations. One month later her serum gastrin concentration was 1,550 pg/ml, and a CT scan revealed a decrease in the size of hepatic metastases. Intravenous administration of streptozotocin was initiated at a dose of 1 gm/week. Further followup evaluation for eight months has shown that the patient is clinically stable with further decrease in the size of hepatic lesions and complete absence of the pancreatic mass on CT scans. Six months later the serum gastrin concentration became elevated to 16,000 pg/ml and she now receives chlorozotocin as the chemotherapeutic agent.

*Case Four:* A 51-year-old black female was admitted to a local hospital several times for acute gastrointestinal hemorrhage. Five years earlier she had undergone operation elsewhere for massive gastrointestinal bleeding, at which time a large retro-pancreatic mass was found with liver nodules and ulceration of tumor in the duodenum. A biopsy only was done which revealed an islet cell tumor. Further evaluation revealed serum gastrin levels greater than 2000 pg/ml. A diagnosis of Zollinger-Ellison syndrome was made and she was referred to the University of Kansas Medical Center for chemotherapeutic treatment. Streptozotocin, 700 mg/day was given intravenously for five days. The only side effect noted was transient blushing. During the next two months she received another five-day course of 700 mg/day intravenously and two abbreviated courses of 300 mg/day. Reduction in dosage was due to the patient's increased creatinine from 1.4-2.0 mg/100 ml, with a reduction of creatinine clearance of 40 to 18 ml/min; in addition she developed 2+ proteinuria. The chemotherapeutic agent 5-FU was also administered in a dosage of 750 mg intravenously during the two abbreviated courses of STZ. By this time serum gastrin had decreased to 1000 pg/ml, and the basal acid secretory rate was



10.8 mEq/hr, stimulated slightly by histalog to 12.4 mEq/hr. Because of a decrease in renal function and severe diarrhea (2-10/day), chemotherapy was discontinued. A year and a half later she was again admitted to UKSM with findings of coffee ground vomitus, melena, and a dropping hemoglobin of 10.6-6.6 gm/100 ml. Serum gastrin levels were now in excess of 90,000 pg/ml. When the patient was stabilized under cimetidine protection, an elective operation for control of acid secretion and debulking of the tumor was done, including total gastrectomy and left hepatic lobectomy (80% of tumor was estimated to be in the left lobe). The pathologic diagnosis was gastrin-secreting carcinoid tumor. The patient was discharged in satisfactory condition. Several months later, she was readmitted for generalized weakness, dyspnea, anorexia, and ascites; however she left the hospital against medical advice shortly after admission.

**Case Five:** A 66-year-old white female was first hospitalized at the University of Kansas Medical Center in 1973 for right subcostal pain with radiation to her back and occasional diarrhea. Upper gastrointestinal barium studies revealed duodenal ulceration, and endoscopy demonstrated duodenal and gastric ulcers. The serum gastrin concentration measured 2,850 pg/ml. A 12-hour volume of gastric secretion was 4,510 ml with basal acid concentration of 71 mEq/L and maximal acid concentration 57 mEq/L, stimulated by histalog. Based on these findings the patient underwent surgery, at which time two small tumors were excised from the retrogastric area. Frozen section revealed ectopic gastrinoma. The pancreas appeared normal grossly and histologically. Because it was felt that the tumor had been completely removed, a vagotomy and subtotal gastrectomy were also carried out. Postoperatively the patient did well and her serum gastrin level decreased to 180 pg/ml. A Hollander test revealed no secretion of free hydrochloric acid to hypoglycemic stimulation. Eight months later she returned with recurrent abdominal pain and watery stools. The serum gastrin concentration, which had remained less than 200 pg/ml, was now elevated to greater than 800 pg/ml. A Hollander test at this time revealed 68 mEq/L of hydrochloric acid fasting, increasing to 118 mEq/L during hypoglycemia. An upper gastrointestinal series and endoscopy revealed two stomal ulcers. A total gastrectomy with esophagojejunostomy and jejunojejunostomy en Roux Y were performed. In addition, a distal pancreatectomy was carried out for biopsy. Microscopic examination showed islet cell hyperplasia (nesidioblastosis without evidence of tumor). Five months

later the patient again returned with symptoms of bile reflux and dysphagia. The hypergastrinemia persisted ( $> 1200$  pg/ml) and the patient developed symptoms of excessive salivation. A revision of the Roux en Y procedure alleviated the bile reflux and dysphagia but the excessive salivation continued. No tumor was observed at this operation. One year later the patient again returned complaining of continued sialorrhea and right upper quadrant abdominal pain. An isotopic scan of the liver demonstrated two large defects. Serum gastrin concentrations were now in excess of 1500 pg/ml. Hepatic metastases were confirmed by operative biopsy as gastrinomas. Because of the new finding of liver metastases and rising serum gastrin levels, streptozotocin therapy (one gm/week for five weeks) was administered but was discontinued because of evidence of nephrotoxicity. She died three months later with markedly increased concentration of serum gastrin and increase in the size of the metastases.

### Results (Table I)

A favorable humoral response to streptozotocin therapy was observed in four of five patients, although in none did serum gastrin concentrations reach normal levels. The lowest serum gastrin in response to treatment was 450 pg/ml in Case One in whom there was no measurable change in tumor status for a period of one year. In this patient intravenous administration of streptozotocin was discontinued after only nine weeks because of the development of nephrotoxicity which was reversible. In one patient, Case Five, serum gastrin concentrations increased during the short time that streptozotocin was given intravenously; the chemotherapeutic agent was discontinued after five weeks because of the development of nephrotoxicity.

There were measurable improvements in terms of clinical and tumor responses in two patients, Cases Two and Three; no discernible change in tumor status in Cases One and Four; and tumor progression in Case Five. The response in Case Three followed intra-arterial administration of one gram of streptozotocin via the celiac axis and consisted of serial decrease in the size and number of liver deposits and disappearance of the pancreatic mass on computerized tomography associated also with the reduction of serum gastrin values from 7650 to 1550 pg/ml. This response was initiated after one intra-arterial course of therapy and continued during weekly intravenous injections during a period of four months.

Nephrotoxicity was not observed when streptozotocin was administered by selective intra-arterial route; it did develop in three patients, Cases One,



TABLE I  
TREATMENT AND RESPONSE OF METASTATIC GASTRINOMAS TO STREPTOZOTOCIN THERAPY

Case No.	Diagnosis	Prior Treatment	Streptozotocin Therapy	Toxicity	Response to Streptozotocin & Humoral (S.G.pg/ml)	Radiologic
1	MEA,I; metastatic gastrinoma (liver + nodes)	Total gastrectomy + exc. metastatic lymph nodes	2.0-2.9 Gm IV/wk/ 9 weeks	Nephrotoxicity nausea + vomiting	2,000 → 450	Static
2	MEA,I; metastatic gastrinoma (liver)	Cimetidine (900 mg q. 6 hr); total gastrectomy, distal pancreatectomy, left hepatic lobectomy	500 mg IV/day/ 5 days month/12 months	Nausea	20,000 → 10,000	Decrease
3	Sporadic metastatic gastrinoma	Cimetidine (600 mg q. 6 hr.)	1 gm IA (celiac) 1.2 gm IV/wk/ 4 months	Nausea + vomiting	7,650 → 1,550	Decrease + disappearance pancreatic mass
4	Sporadic metastatic gastrinoma-carcinoid (liver, nodes, pancreas)	Surgical biopsy post-chemotherapy cimetidine + total gastrectomy + left hepatic lobectomy	700 mg IV/day/ 5 days/wk/2 wks 300 mg IV/day/ 5 days/wk/2 wks	Nephrotoxicity nausea + vomiting	2,000 → 1,000	Static
5	Sporadic metastatic gastrinoma (liver) ectopic gastrinoma + islet hyperplasia	Exc. ectopic gastrinomas + vagotomy + S.T. gastrectomy, total gastrectomy + distal pancreatectomy	1 gm IV/day/wk/ 5 wks	Nephrotoxicity nausea + vomiting	2,000 → 4,000	Progression

Four and Five, who received streptozotocin systemically, intravenously. This complication limited continuing treatment in these patients, but was reversible and non-fatal.

## Discussion

The treatment of patients with the Zollinger-Ellison syndrome is directed in a dual manner toward the exocrine effect of gastric acid hypersecretion and to the endocrine gastrin-secreting tumor. While receptor blockade with cimetidine or excision of the end-organ by total gastrectomy is palliative, the latter has also been observed to initiate tumor regression in approximately eight patients in the United States, including Case One.<sup>19</sup> The primary goal of treatment, however, is tumor excision in patients diagnosed early by appropriate humoral assays before metastases to the liver occur. For most patients a combination of therapeutic modalities is indicated, particularly excision of tumor and total gastrectomy;<sup>19</sup> for those already having hematogenous metastases, chemotherapeutic agents such

as streptozotocin should be offered for their 50 per cent incidence of effectiveness. It is apparent from this small experience that selective intra-arterial administration is not only more effective against tumor but safer than the systemic intravenous route in terms of the development of nephrotoxicity.

There is general correlation between the observed biochemical response measured as the serum gastrin marker and the radiologic estimation of tumor status by computerized tomography. Both methods of followup are mutually valuable in assessing clinical prognosis in endocrinopathies with chronic characteristics. In this regard cimetidine treatment, by virtue of its remarkable palliative effect, may lead to a procrastination of surgical excision of tumor; actual progression of tumor growth occurs during cimetidine treatment, as illustrated here in Cases Two, Three, and Four.

Two patients in this group have the genetic type of endocrinopathy in which the ulcerogenic tumor is a component of multiple endocrine adenopathy, type I. This circumstance complicates clinical management because of the proclivity for multiple lesions as

well as the association of other endocrinopathies of the parathyroid and pituitary glands.

One of the tumors (Case Four) in this series of patients had carcinoid characteristics histologically; nevertheless its predominant functional capacity was of gastrinomas and is called an islet-carcinoid gastrinoma. Cutaneous flushing was observed on one occasion in this patient during intravenous administration of streptozotocin.

Case Five is interesting from two points of view. The tumor was first noted to be ectopic, paragastric in location and considered to be completely excised, hence the addition of only a possible palliative vagotomy and subtotal gastrectomy, before the availability of cimetidine. The serum gastrin concentrations of 180 pg/ml postoperatively supported that contention. However, the subsequent development during eight months of stomal ulceration and re-elevation of serum gastrin concentrations to 845 pg/ml indicated reemergence of the Zollinger-Ellison syndrome due to islet cell hyperplasia as found by distal pancreatectomy and total gastrectomy. Continuing subsequent elevations of serum gastrin concentrations of 1200 to 2000 pg/ml were found to be due to hepatic metastases, presumably from another undisclosed primary gastrinoma, and prompted the short term and unsuccessful use of intravenous streptozotocin therapy. The other point of interest relates to the development of severe salivation in spite of maintenance of patency of the esophagojejunostomy and surgical correction of bile reflux. It is believed, but not confirmed, that the sialorrhea was due to salivary gland hyperplasia as has been reported.<sup>20</sup>

## Summary

Five patients with metastatic gastrinomas of the Zollinger-Ellison syndrome are described who have been treated with streptozotocin, a chemotherapeutic agent active against islet cell tumors. Favorable responses followed treatment in four of five patients as measured biochemically, two of whom demonstrated a decrease in tumor size and lack of progression in another two patients. None achieved complete remission. Reversible nephrotoxicity developed in three patients who received the drug systemically, intravenously. Selective intra-arterial administration of streptozotocin in this limited experience with metastatic gastrinomas was more effective and safer than by the intravenous route.

## References

1. Pitkin, R. M. and Reynolds, W. A.: Diabetogenic effects of streptozotocin in Rhesus monkeys. *Diabetes* 19:85-90, 1979.
2. Murray-Lyon, I. M. *et al.*: Treatment of multiple-hormone producing malignant cell tumor with streptozotocin. *Lancet* 2:895-898, 1968.
3. Ruffner, B. W. Jr.: Chemotherapy for malignant Zollinger-Ellison tumors: Successful treatment with streptozotocin and fluorouracil. *Arch. Intern. Med.* 136:1032-1034, 1976.
4. Stadil, F. *et al.*: Treatment of Zollinger-Ellison syndrome with streptozotocin. *N. Engl. J. Med.* 294:1440-1442, 1976.
5. Cryer, P. E. and Hill, G. J.: Pancreatic islet cell carcinoma with hypercalcemia and hypergastrinemia: Response to streptozotocin. *Cancer* 38:2217-2221, 1976.
6. Broder, L. E. and Carter, S. K.: Pancreatic islet cell carcinoma: Results of therapy with streptozotocin in 52 patients. *Ann. Intern. Med.* 79:108-118, 1973.
7. Awrich, A. *et al.*: 5-FU versus combination therapy with tubercidin, streptozotocin and 5-FU in the treatment of pancreatic carcinomas: GOG protocol 7230. *J. Surg. Oncol.* 12:267-273, 1979.
8. Bloom, S. R.; Polak, J. M. and Pearse, A. G. E.: Vasoactive intestinal peptide and watery diarrhea syndrome. *Lancet* 2:14-16, 1973.
9. Gagel, R. F. *et al.*: Streptozotocin treated Verner-Morrison syndrome, plasma vasoactive intestinal peptide and tumor responses. *Arch. Intern. Med.* 136:1429-1435, 1976.
10. Kessinger, A.; Lemon, H. M. and Foley, J. F.: The glucagonoma syndrome and its management. *J. Surg. Oncol.* 9:419-424, 1977.
11. Danforth, D. N. Jr. *et al.*: Elevated plasma proglucagon-like component with a glucagon-secreting tumor: Effect of streptozotocin. *N. Engl. J. Med.* 295:242-245, 1976.
12. Khandekar, J. D.; Oyer, D.; Miller, H. H. and Vick, N. A.: Neurologic involvement in glucagonoma syndrome response to combination chemotherapy with 5-fluorouracil and streptozotocin. *Cancer* 44:2014-2016, 1979.
13. Pipeleers, D. *et al.*: Plasma pancreatic hormone levels in a case of somatostatinoma: Diagnostic and therapeutic implications. *J. Clin. Endocrinol. Metab.* 49:572-579, 1979.
14. DeWys, W. D.; Stoll, R.; Au, W. Y. and Salisnjak, M.: Effects of streptozotocin on an islet cell carcinoma with hypercalcemia. *Am. J. Med.* 55:671-676, 1973.
15. Friesen, S. R.; Kimmel, J. R. and Tomita, T.: Pancreatic polypeptide as screening marker for pancreatic polypeptide apudomas in multiple endocrinopathies. *Am. J. Surg.* 139:61-72, 1980.
16. Schein, P. *et al.*: Streptozotocin for malignant insulinomas and carcinoid tumor: Report of eight cases and review of the literature. *Arch. Intern. Med.* 132:555-561, 1973.
17. Charnicoff, D.; Bukowski, R. M.; Groppe, C. W. Jr. and Hewlett, J. S.: Combination chemotherapy for islet cell carcinoma and metastatic carcinoid tumors with 5-fluorouracil and streptozotocin. *Cancer Treat. Rep.* 63:795-796, 1979.
18. Dilaware, R. A. and Douglass, H. O.: Gastrointestinal carcinoids: Extrahepatic metastases and symptomatology following resection. *J. Surg. Oncol.* 11:243-248, 1979.
19. Friesen, S. R.: Treatment of the Zollinger-Ellison syndrome: A 25-year assessment. *Am. J. Surg.* (in press 1981).
20. Jones, B. S.; O'Hagan, J. J.; Phear, D. N. and Sheville, E.: A case of the Zollinger-Ellison syndrome associated with hyperplasia of salivary and Brunner's glands. *Gut* 11:837-839, 1970.



# Renal Evaluation

## *Renal Functions Following Renal Vein Ligation*

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LIGATION of the left renal vein is sometimes necessary to gain additional exposure during surgery on the abdominal aorta. Renal drainage has been felt to be adequate with preservation of collateral gonadal, adrenal, and renal cortical pathways.<sup>1-6</sup> Studies in this area relied on intravenous pyelograms (IVP), blood urea nitrogen (BUN), serum creatinine (Cr), and urinalysis (UA) to evaluate renal function.

Currently, a study is underway to evaluate renal function following left renal vein ligation during surgery on the abdominal aorta. The prior laboratory and radiologic studies mentioned are used. In addition, renal scans are also obtained. The scans include the use of <sup>99m</sup>Tc DTPA (diethylenetriamine penta-acetic acid) and <sup>131</sup>I-ortho-iodohippurate (hippuran) as scanning agents. DTPA provides information regarding the vascular phase or glomerular function and hippuran for excretion or the tubular phase of renal function. These studies provide more accurate information regarding renal function than IVP, BUN, Cr, and UA. Furthermore, regional distribution of functional renal parenchyma can be evaluated.

Preliminary data are presented, and correlation with various clinical situations are discussed. Normal renal scans are demonstrated in *Figures 1* and *2*.

### Case Reports

*Case One:* A 71-year-old white female presented with an abdominal aortic aneurysm. Preoperative IVP was normal; BUN, 20; Cr, 1.0; UA, normal; and renal scan showed bilateral symmetric function. After resection of the aneurysm, which included ligation of the left renal vein, studies showed a normal IVP; BUN, 10; Cr, 1.0; and bilateral sym-

metric function on renal scan. Outpatient renal scan two months postoperatively confirmed good renal function.

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**Data regarding renal function following renal vein ligation during surgery of the abdominal aorta are currently being collected. Preliminary findings and clinical correlation are discussed.**

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*Case Two:* A 72-year-old white male was admitted with an abdominal aortic aneurysm. Preoperative studies showed: IVP, normal; BUN, 11; Cr, 1.1; and UA, normal. Renal scan showed bilateral symmetric function. The left renal vein was ligated during surgery. On the ninth day postoperatively, IVP was reported normal; BUN, 15; Cr, 1.2; and UA, normal. Renal scan (*Figure 3*) showed decreased glomerular function of the left kidney, which was not appreciated on IVP. An outpatient renal scan two months later showed bilateral symmetric function.

*Case Three:* A 74-year-old white female was admitted with hypotension and abdominal pain. Preoperative studies included only an abdominal sonogram and CBC. At operation, a ruptured abdominal aneurysm with a large contained retroperitoneal hematoma was found. Ligation of the left renal vein was required for exposure. On the first postoperative day, BUN was 27; Cr, 1.2. Five days later BUN was 15; Cr, 1.1. Renal scan at this time showed bilateral decreased but symmetric function consistent with glomerulonephrosclerosis.

*Case Four:* A 58-year-old white, obese female with insulin dependent diabetes mellitus had a history of alcohol abuse and severe hypertension partially controlled with dyazide, hydralazine, and propranolol. Results of preoperative studies included: IVP, normal; BUN, 17; Cr, 0.9; and UA, trace protein. Renal scan demonstrated bilateral function, slightly better in the right kidney. An aortoiliac bypass was performed for severe aortoiliac occlusive disease and disabling claudication. The left renal vein was ligated for exposure. On the fifth

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Figure 1. Normal DTPA blood flow study showing visualization of the aorta and bilateral symmetrical uptake by the kidneys.



Figure 2. Normal hippuran scan.

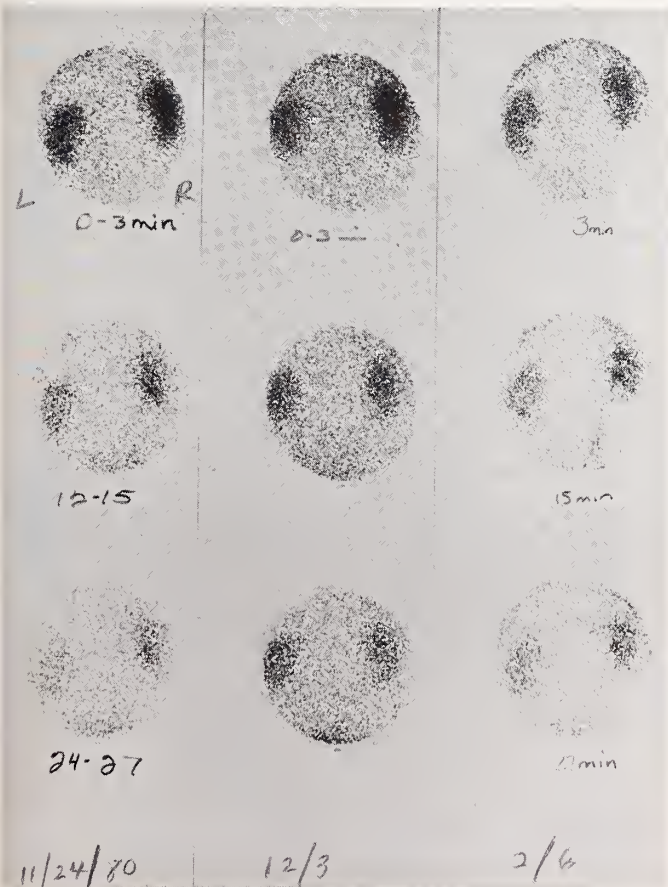


Figure 3. 11/24/80 preoperative hippuran scan. Scan 12/3 demonstrates decreased function of left kidney not appreciated on IVP. 2/6 shows bilateral symmetrical function.

postoperative day, BUN was 22; Cr, 1.4; and UA, normal. She had developed severe pedal edema which was resistant to diuretic therapy. A renal scan showed non-function of the left kidney (*Figure 4*). Ten days later the renal scan was unchanged. One month postoperatively BUN was 25; Cr, 1.8; UA, normal; and renal scan at this time revealed markedly decreased function on the left side, but the kidney did visualize late with DTPA. IVP visualized the left kidney poorly. Three months postoperatively BUN was 26; Cr, 1.6; and renal scan and IVP demonstrated good function of the left kidney.

*Case Five:* A 62-year-old white male was admitted with right side abdominal pain and claudication. Blood pressure was 128/80 with no medication. Preoperative workup revealed an abdominal aortic aneurysm and severe iliac occlusive disease. IVP was reported as normal; BUN, 18; Cr, 1.3; and UA, normal. Renal scan at this time showed late perfusion of the left kidney compatible with stenosis of the left renal artery. Resection of the aneurysm with aortofemoral bypass was performed. Clamping of the proximal aorta was achieved without dividing the left renal vein. Postoperatively he did well except for high blood pressure which became increasingly difficult to manage. On the fifth postoperative day, his blood pressure was 200/100 despite diuretics, hydralazine, and large doses of propranolol. His abdomen was soft with active bowel sounds,



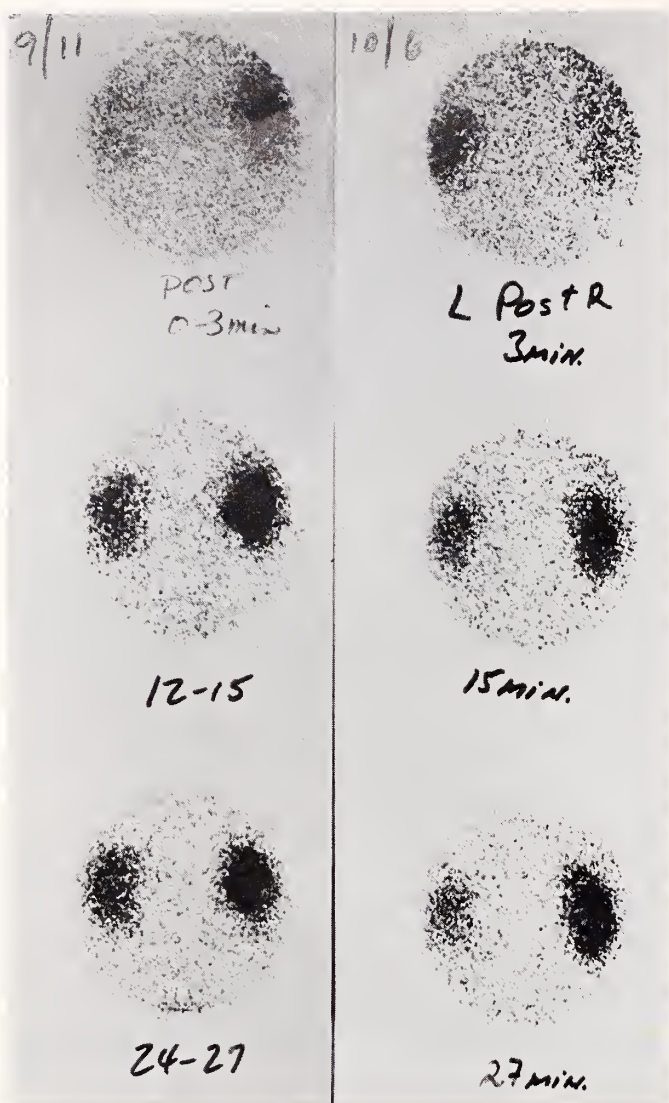


Figure 4. Initial postoperative hippuran scan 9/11/79 shows no function of the left kidney, which improved by 10/6.

although he was nauseated (no vomiting) and complaining of left flank pain. The next day BUN was 86; Cr, 4.9; and UA showed 1+ protein. A renal scan showed patchy decreased function on the right side and no function of the left kidney (Figure 5). On the presumption that atherosclerotic material might have embolized to the kidneys during aortic cross clamping, heparin was started. His condition slowly improved, and by the fourteenth postoperative day no medication was required to maintain his blood pressure at preoperative levels. BUN was 75; Cr, 4.5; and renal scan continued to show patchy function of the right kidney, and decreased but present function of the left kidney. Overall function was definitely improved from the prior scan. Renal scan two months after dismissal was comparable to preoperative scan, with the exception of some

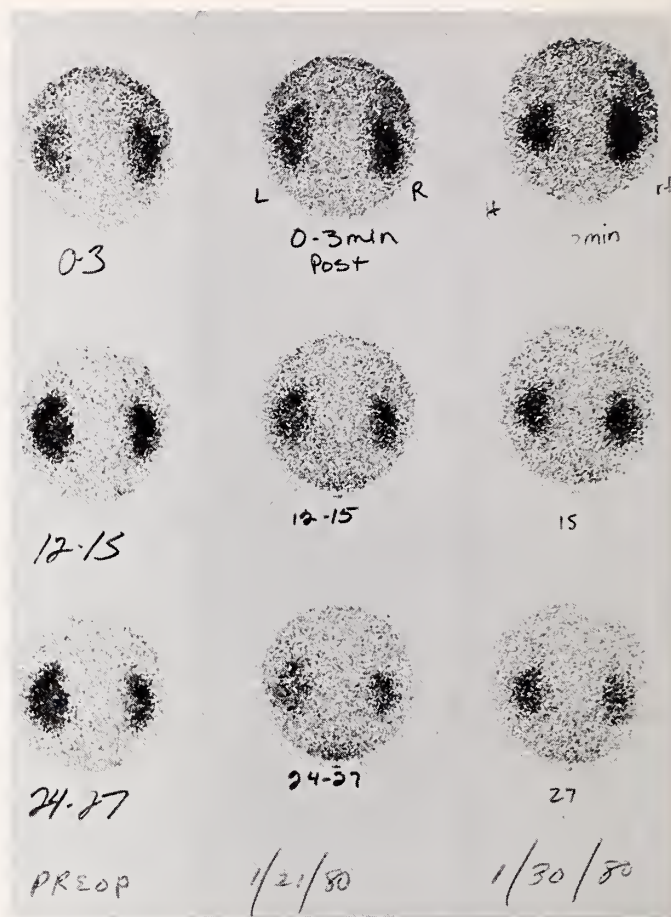


Figure 5. Hippuran scan demonstrating slight function in the left kidney by 1/30/80.

patchy decreased function of the right kidney. This patchy uptake was not appreciated on IVP.

### Discussion

The left renal vein differs from the right side in that gonadal, adrenal, and lumbar collaterals empty into this larger vein instead of directly into the cava.<sup>5</sup> The study by Cox<sup>3</sup> supports the theory that, after ligation of the left renal vein, the main course of venous return to the systemic circulation is via the internal iliac with little dependence on caval collaterals.

Although ligation of the left renal vein is well tolerated clinically, our patients demonstrate that there is a definite effect on renal function. Renal scans utilizing DTPA for the vascular or glomerular phase and hippuran for the excretion or tubular phase are more sensitive indicators of renal function than IVP, BUN, Cr, and UA.

The patients presented depict several patterns that are seen following left renal vein ligation:

1. No decrease in function (seen in about 50% of our cases);
2. Decreased function that reverses in a few days;

3. Decreased function that reverses in a few months; or

4. No initial function with subsequent improvement.

Furthermore, Case Five represents the course in a patient with apparent atherosclerotic emboli to the kidneys. This likely occurred during proximal aortic cross clamping and undoubtedly is more frequent than such a clinically apparent case as this.

We feel these cases demonstrate the usefulness of the renal scan in evaluating renal function by a non-invasive means. It may be done at the bedside in postoperative patients, and there is no problem with injecting radiographic dye (*i.e.* Renografin). Furthermore, it demonstrates renal function more accurately than other available tests, and can portray segmental perfusion defects. It appears that the pattern of renal function seen in these patients after renal vein ligation is similar to the natural course of renal vein thrombosis.<sup>7</sup>

If additional proximal exposure is required during surgery of the abdominal aorta, we feel that ligation of the left renal vein may be safely carried out. Although there is a definite decrease in glomerular function appreciated on renal scan in some patients, this decrease is temporary and does not appear to be clinically significant.

## References

1. James, E. C. *et al.*: Division of the left renal vein: A safe surgical adjunct. *Surgery* 83:151, 1978.
2. Paty, U. S. *et al.*: Renal function after ligation of right renal vein. *Urology* 5:95, 1975.
3. Cox, J. S. T. *et al.*: Collateral circulation after renal vein ligation. *Surgery* 52:875, 1962.
4. Harris, J. D. *et al.*: Experimental renal vein occlusion. *Surg. Gynecol. Obstet.* 126:555, 1968.
5. Erlik, D. *et al.*: Renal function after left renal vein ligation. *J. Urol.* 93:540, 1965.
6. Baird, R. J. *et al.*: Use of the left renal vein for portal decompression. *Ann. Surg.* 173:551, 1971.
7. Baum, N. H. *et al.*: Renal vein thrombosis. *J. Urol.* 119:443, 1978.

## Heat Stroke and Allied Disorders

(Continued from page 239)

1. True
2. False
3. True
4. False
5. False

## Suggested Readings

1. Knochel, J. P.: Environmental heat illness. *Arch. Intern. Med.* 133:841-864, 1974.
2. Shibolet, S.; Lancaster, M. C. and Danon, Y.: Heat stroke: A review. *Aviat. Space Environ. Med.* 47:280-301, 1976.
3. Stine, R. J.: Heat illness. *J. Am. Coll. Emerg. Phys.* 8:154-160, 1979.
4. Knochel, J. P.: Dog days and siriasis: How to kill a football player. *JAMA* 233:513-515, 1975.
5. Hanson, P. G. and Zimmerman, S. W.: Exertional heat-stroke in novice runners. *JAMA* 242:154-157, 1979.
6. Knochel, J. P.; Dotin, L. N. and Hamburger, R. J.: Heat stress, exercise, and muscle injury: Effects on urate metabolism and renal function. *Ann. Intern. Med.* 81:321-328, 1974.
7. Center for Disease Control: Heat wave-related morbidity and mortality — Missouri. *Morbidity Mortality Weekly Rep.* 29:390-392, 1980.
8. Steinzeig, S. M.: Heat stroke: Experience at the Winfield State Training School during a record heat wave. *J. Kans. Med. Soc.* 56:426-429, 1955.



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# Renovascular Hypertension

## Assessment of Operative Therapy

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OPERATIVE RESULTS of renal revascularization were assessed in a series of 34 patients to answer the following questions:

1. Should operation be reserved only for younger (less than 50 years old) patients?
2. Can associated vascular diseases be safely treated at the same time?
3. What was the outcome of patients who underwent bilateral synchronous renal revascularization?

### Materials and Methods

All patients were operated by a single surgical group at Research Hospital Medical Center and North Kansas City Hospital during a ten-year period, 1970-1980. Criteria for operation were: proven renovascular hypertension; poor control with medical therapy; and absence of terminal malignant disease or absolute contraindication for general anesthesia. Old age alone was not considered a contraindication for operation. Likewise, patients with concomitant peripheral vascular disease or history of old myocardial infarction or cerebrovascular disease were also considered for renal revascularization. Thirty-four patients complied with these criteria and were included in this series. Mean age was 57 years (range: 14-68 yrs). Male : female ratio was approximately 1 : 2. Preoperative evaluation included intravenous pyelogram, isotopic renal scan, and selective renal arteriography in all patients. Renal vein renin levels were determined in 28 and renal biopsy was performed in 13 patients. In 19 cases there was severe associated peripheral vascular disease elsewhere in the body, five had a past history of myocardial infarction, and eight had findings consistent with cerebrovascular disease. Overt renal failure was present in 12 patients. After operation, mean

**Results of operative renal revascularization were assessed in a series of 34 patients including nine who were more than 60 years old and 19 who had severe vascular disease elsewhere. Results suggested that operation for renal revascularization was safe and could be successful even in elderly individuals and those with associated vascular disease.**

postoperative followup period was three years (range: 6 mos to 5 yrs).

### Results

As shown by *Table I*, angiography showed abnormal results in 100 per cent of patients, whereas intravenous pyelogram, isotopic renal scan, and renal vein renin levels were less accurate in selecting candidates for renal revascularization. Preoperative renal biopsy detected abnormalities in all 13 patients in which it was performed. Preoperative evaluation disclosed abdominal aortic abnormalities in 26 patients. Aneurysm was found in 19, severe narrowing due to aortic obstructive disease in three, and tortuosity in four. In two patients there was concomitant stenosis of the celiac axis and superior mesenteric artery. Stenosis of the inferior mesenteric artery was frequently detected. Angiographic renal artery assessment showed complete occlusion in six patients, severe stenosis (narrowing of 90% or more of the lumen) in 23 and moderate stenosis (narrowing

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TABLE I RESULTS OF PREOPERATIVE EVALUATION		
	Normal	Abnormal
Intravenous pyelonephrogram	18	16
Renal scan	4	30
Angiography	0	34
Selective serum renin contents	8	20
Renal biopsy	0	13

TABLE II  
EARLY POSTOPERATIVE MORTALITY  
AND MORBIDITY  
30-day Postoperative Mortality: 0%

Morbidity:	Mild	Severe
Renal artery thrombosis		4
Respiratory infection	6	1
Ileus	5	1
Pancreatitis	2	
Postoperative anemia		1
Reflux esophagitis	1	

of 75-90% of the lumen) in three. Renal artery aneurysm was present in two patients. Twelve (35%) had bilateral surgically correctable renal artery disease, and 11 of them underwent bilateral synchronous renal revascularization. Consequently, 45 revascularization procedures were performed in 34 patients. Aorto-renal bypass grafts were used in 27, endarterectomy in 15, resection of the diseased segment and end-to-end anastomosis in three; concomitant abdominal aortic aneurysmectomy was performed in all 19 patients presenting this condition at exploration. Concomitant cholecystectomy was performed in one patient.

Early (30-day) postoperative morbidity included renal artery thrombosis in four patients. In one of them, thromboembolism was unsuccessfully attempted. This patient and one other required subsequent reoperation (nephrectomy). Respiratory infection was detected in seven and was severe in one. Six patients developed prolonged postoperative ileus, which was severe in one case. Other infrequent causes for postoperative morbidity included bleeding, pancreatitis, and reflux esophagitis (*Table II*).

There was no 30-day postoperative mortality in this series. Subsequently, one sudden death oc-

curred, suspected to have been caused by pulmonary embolism two and a half months after operation; a second patient died three months after operation with alcoholic encephalopathy and multiple organ failure. All surviving patients were evaluated regarding operative result in June 1980. Eighteen patients were normotensive without medication, five were normotensive while taking a single antihypertensive agent, and three more while taking two or more antihypertensive agents. In six patients arterial hypertension was poorly controlled (therapeutic failure) (*Table III*). Postoperative renal scan was performed in 12 patients who had less than good results. Results correlated well with the subsequent evolution of these patients (*Table IV*); postoperative serum creatinine and BUN were normal in 30 patients including some who had poor clinical results. Postoperative renin levels were performed only in four patients and were normal in three of them.

Comparing results in younger (less than 50-year-old) patients (Group A) with those between the ages of 50 and 60 years (Group B) and those 60 years old or older (Group C) disclosed that while there was no operative mortality in any group, best operative results were achieved in Group A and B; of nine patients in Group C, only two had good results and less than half benefited at all from renal revascularization (*Table IV*).

Of the ten patients who underwent bilateral synchronous renal artery repair, three had excellent functional results and four others were improved as compared with their preoperative status. There were three therapeutic failures of bilateral renal revascularization.

### Comments

The search for a reliable preoperative test to predict postoperative results (normalization of blood pressure and kidney function) still continues. Renovascular resistance, renal arterial pressure gradients, and renal biopsy did not help in the selection of

TABLE III  
POSTOPERATIVE RESULTS

	Patients
Normotensive without medication	18
Normotensive with single antihypertensive agent	5
Normotensive with two antihypertensive agents	3
Poor hypertension control	6
Died (unrelated cause)	2
Total	34

TABLE IV  
RESULTS IN OLDER PATIENTS  
( $\geq 60$  Years)

Number of patients	9
Associated diseases	6
Associated operations	3
<i>Results</i>	
Good	2
Mediocre	2
Poor	5



patients for operation.<sup>1</sup> Renal vein renin levels were elevated next to the ischemic kidney and suppressed at the contralateral one,<sup>2</sup> but if no lateralization of results was detected, renal artery pathology could not be excluded and need for operation was not ruled out.<sup>3</sup> Although Buda *et al.* emphasized the usefulness of graded quantitated renal biopsy results,<sup>4</sup> others found that it added little to prognosis.<sup>5</sup> Split renal functions correlated with lesions in only 60-71 per cent of cases.<sup>5, 6</sup> Standard intravenous pyelogram (IVP) was abnormal in only 20 per cent of patients requiring operation. Rapid sequence IVP increased its reliability to 56 per cent, and if renal scan was added, 68 per cent of cases requiring operation were detected.<sup>5</sup> Favorable results with tests involving angiotensin II antagonist (Saralasin acetate)<sup>4</sup> and urinary N-acetyl-B-D-glucosaminidase level determinations have been reported by some.<sup>4, 7</sup>

Criteria for indication of operation varied. Vollmer *et al.*<sup>1</sup> recommended that operation be restricted to individuals who were less than 40 years old. Conversely, Foster *et al.* stated that 80 per cent of all individuals in their series who were 50 years old or older were cured or improved by operation, with an operative mortality rate of 8.6 per cent.<sup>8</sup> Long term (10 years) survival in older individuals after renal revascularization has been reported.<sup>9</sup> In our own series two-thirds of individuals who were 60 years old or older had severe associated diseases and one-third required operative correction of such conditions at the time of renal revascularization. This could be accomplished without mortality, but analysis of operative results showed that less than 50 per cent of these patients benefited from operation. These results suggested that while renal operative revascularization was feasible in older individuals even in the presence of associated diseases, and did not result in mortality, it did not help most of the patients either; thus, indications for this operation in patients older than 60 years should perhaps be reassessed. Results of synchronous bilateral renal artery reconstruction showed that the additional operative risk was small and was outweighed by the good operative results in more than two-thirds of patients. Further use of this therapeutic modality is recommended.

Therapeutic alternatives to renal revascularization included medical management of arterial hypertension and transluminal angioplasty. After Dotter *et al.* first described the efficacy of transluminal dilation of stenosed arteries in 1964,<sup>10</sup> considerable interest was generated because it represented a less invasive alternative to operation. Good and bad re-

sults with transluminal angioplasty have been reported in atherosclerotic individuals.<sup>11</sup> Anecdotic good results were reported in this country in the treatment of renal artery fibromuscular disease with Fogarty balloon dilation under direct vision at operation.<sup>12</sup> Stuber<sup>13</sup> has also had some excellent short term results. Long term results with transluminal angioplasty in renal artery stenosis in this country have not been available to us for comparison. Our own limited and unpublished experience with transluminal angioplasty in peripheral atherosclerotic arteries suggests that acute thrombosis at the dilated segment could occur after initially successful revascularization. As in the past with other new procedures, only time will tell if transluminal angioplasty will have a definitive place in renal revascularization. Meanwhile, we recommend that patients complying with the criteria enunciated at the beginning of this report be considered for operative renal revascularization because of excellent survival figures and good therapeutic success obtained in this series.

### Acknowledgement

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### References

1. Volmar, J.; Nadjafi, S. and Rosenthal, J.: Surgical consideration in the treatment of renovascular hypertension. *Surg. Gynecol. Obstet.* 144:553-559, 1977.
2. Vaughan, E. D. *et al.*: Renovascular hypertension: Renin measurements to indicate hypersecretion and contralateral suppression, estimate renal plasma flow and score for surgical curability. *Am. J. Med.* 55:402, 1973.
3. Maxwell, M. H. *et al.*: Predictive value of renin determinations in renal artery stenosis. *JAMA* 238:2617-2620, 1977.
4. Buda, J. A.; Baer, L. and Parra-Carillo, J. Z.: Predictability of surgical response in renovascular hypertension. *Arch. Surg.* 111:1243-1248, 1976.
5. Goldberg, M. R.; Lassonde, J.; Wilson, D. R. and Baird, R. J.: Reconstructive vascular surgery for renovascular hypertension. *Can. Med. Assoc. J.* 110:275, 1974.
6. Osada, Y.; Amano, T.; Momose, S. and Inokuchi, K.: Surgical treatment of renovascular hypertension associated with bilateral renal artery stenosis. *J. Urol.* 120:537, 1978.
7. Mansell, M. A. *et al.*: Detection of renal artery stenosis by measuring urinary N-acetyl-B-D-glucosaminidase. *Br. Med. J.* 1:414-415, 1978.
8. Foster, J. H. *et al.*: Ten years' experience with the surgical management of renovascular hypertension. *Ann. Surg.* 177:755-766, 1973.
9. Dean, R. H.: Bilateral renal artery reconstruction: A ten year arteriographic followup. *JAMA* 235:938, 1976.

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# Intra-Aortic Balloon Pump

## *Limited Use for Maximum Effectiveness in Cardiac Surgery*

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INTRA-AORTIC BALLOON counterpulsation is in nearly every cardiac surgeon's armamentarium of therapy. It is a relatively new tool, first utilized clinically in 1968 by Kantrowitz for the stabilization of patients with cardiogenic shock. It has since been used in the operating suite to stabilize patients with cardiogenic shock awaiting operation, and to aid in weaning patients from cardiopulmonary bypass. More recently, prophylactic use has been recommended. This entails insertion of the intra-aortic balloon pump (IABP) prior to aortocoronary vein grafting. Garcia recommends this for all patients with left main coronary artery disease; Cooper for all patients with pre-infarction and unstable angina; and Goldman *et al.* for all coronary artery bypass in patients with poor left ventricular function. The goal of this review is to continue the evaluation of indications for the IABP relative to cardiac surgery.

### Materials and Methods

The IABP is the result of work by Clauss and associates in 1961, who proposed the theoretical value of counterpulsation. As reviewed in Kaplan's paper, arterial counterpulsation withdraws blood from the aorta during systole and returns it during diastole. The mechanism of action is reduction of aortic and left ventricular systolic pressure and left ventricular wall tension. This reduces myocardial oxygen consumption. Concurrently, the increased aortic blood volume during diastole increases coronary artery perfusion. The above concept is still valid today.

The Datascope intra-aortic balloon is the one most often used at Wesley Medical Center. The technique of insertion is similar to the manufacturer's recommendations and can be accomplished simply, be it with local or general anesthesia, with simple technical maneuvers which are well established. Some

form of anticoagulation is necessary when the intra-aortic balloon is in place. We often use low molecular weight dextran or heparin. It is important to monitor the platelet count while the balloon pump is in place. Adequate hemodynamic monitoring is essential.

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**A review of the use of the intra-aortic balloon pump (IABP) at Wesley Medical Center during the past 24 months reveals that it has been used 28 times in 900 cardiopulmonary bypass cases. The IABP is an excellent tool, but often overused. We achieve a low overall mortality by selective utilization of this surgical accessory.**

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Anesthetic techniques are standardized in almost all patients with sick myocardiums. This includes anesthesia and analgesia provided by Fentanyl titration. Monitoring always includes a central venous pressure and an intra-arterial line. Seldom, a Swan-Ganz catheter is placed preoperatively. In very sick patients, a pulmonary artery or left atrial line is commonly placed soon after the chest is opened or at the end of cardiopulmonary bypass. This style of anesthesia requires 4-24 hours of a ventilatory assist during the postoperative period, although we have not experienced untoward effects due to this. Cardioplegic solution is utilized routinely at a temperature of 4C with added potassium maintaining the solution at an alkaline pH.

### Results

Of 900 open heart procedures performed, 28 have been placed on the IABP. To evaluate these patients, we divide them into three groups, as does Kaplan. Group I requires the IABP before arrival in the operating room; Group II has the IABP inserted electively in the operating room before cardiopulmonary bypass; and Group III individuals require the IABP at the end of bypass. Review of the literature shows that the most common indications for preoperative institution of the IABP are complicated acute myocardial infarctions, refractory ventricular

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tachyarrhythmias, extremely poor left ventricular function, or extensive coronary and valvular heart disease. Indications for the IABP after cardiopulmonary bypass are inability to discontinue cardiopulmonary bypass within 30-60 minutes after adequate fluid and vasopressor therapy. Referring to the above grouping, 22 of our patients belong to Group III, four to Group II, and one is in Group I. An additional patient had the IABP placed three days after cardiopulmonary bypass. Group III patients include 11 receiving multiple or single valve replacement with, most commonly, cardiac failure or coronary artery disease or both; four patients with left ventricular aneurysms; five patients with pre-infarction angina; and one with an ascending aortic aneurysm. The patient in Group I had a left ventricular aneurysm with pulmonary edema and congestive heart failure. The patients in Group II include two patients with complications of acute myocardial infarction, *i.e.* ventricular septal defects (VSD); one with severe aortic stenosis; and one with a left main coronary artery lesion which was post-myocardial infarction by five days. One patient had the balloon placed three days post mitral valve replacement and coronary artery bypass for low cardiac output syndrome. He is noted to have had an extremely sick myocardium pre- and post-operatively. As one can note from the above statistics, we do not routinely use the IABP for cardiogenic shock. We do believe, in reviewing the statistics, that all the patients exhibited marked cardiac disease.

## Discussion

According to Craver, the least controversial indications and the most dramatic successes of IABP have come from its role as a support modality in helping patients who otherwise could not separate from cardiopulmonary bypass. IABP provides time for the previously compensated myocardium to recover from intra-operative acute ischemic injury or other operative depression. This role was first presented by Buckley *et al.* in 1972 and has been confirmed by other series. It is substantiated by the present report.

The patients presented here are in a profound low output state after maximum inotropic support or nitroprusside therapy. An adequate filling volume is always monitored cautiously. This is combined with a reasonable amount of patience. If, after this vigorous support, the patient is unable to maintain adequate cardiac output, IABP is then indicated. Twenty-two of our 28 cases of IABP were in this group, or approximately 80 per cent of our use. A mortality rate of 40 per cent was noted within this subset.

Referring again to Kaplan's article, our indications for using the IABP following cardiopulmonary bypass have undergone revision. Improved anesthetic techniques, myocardial preservation, and vasodilator therapy appear to have decreased the need for the IABP after bypass. In the past, excessive use was made of vasoconstrictors alone in an effort to discontinue bypass. We believe the proper use of inotropes and vasodilators alone or in combination has served to reduce the need of IABP following cardiopulmonary bypass.

Preoperative use has centered around stabilizing acute myocardial infarctions with cardiogenic shock, stabilizing complications of acute myocardial infarctions including VSDs and left ventricular aneurysms; pre-infarction angina, although reasonable early operative therapy is usually chosen; and left main coronary disease. With the cardiac monitoring available today, the use of pressor agents and adequate fluid load and, most importantly, the addition of vasodilators, necessity for IABPs must be decreasing in this instance also.

In our center during the last two years we have used the balloon pump preoperatively only five times. Two patients suffered left ventricular aneurysms with congestive heart disease; one was post-myocardial infarction five days and in a low cardiac output syndrome; one had aortic stenosis with congestive heart failure and severe generalized edema; and one patient had an acute VSD post-myocardial infarction. This group is not large enough to make significant statements regarding the balloon's use preoperatively. It does seem to reflect the conservative approach of medical management existing at Wesley Medical Center. Operative intervention is seldom hastily decided upon. Medical therapy is not easily abandoned. We compare this with an overall mortality rate of 0.5 per cent in more than 700 coronary artery bypass operations during the past two years, not excluding any patients because of the severity of their disease or their advanced age. We feel the above statements lend credence to the statistics quoted in demonstrating a small need for preoperative stabilization with the IABP.

In addition, complications can occur. These include ischemia of the leg, dissection of the aorta, thrombus formation and embolization, thrombocytopenia, infection, and gas embolization. One patient in our study underwent an above-the-knee amputation.

In conclusion, we believe the IABP can be extremely useful in cardiac surgical patients. Howev-

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# Villous Duodenal Adenoma

## *A Less Aggressive Approach*

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"For every big operation there should be a little one." — Tom Jones

WHEN SCHULTEN and coworkers reviewed the world medical literature on villous adenoma of the duodenum in 1976, they retrieved only 42 well documented cases since this lesion was first described by Golden in 1928. To these, Schulten *et al.* added another patient, to reach a total of 43 reported cases.<sup>1</sup> We recently reported two more patients with this disease<sup>2</sup> and our third case is hereby presented.

### Case Report

A 91-year-old male was admitted because of cramping abdominal pain, melena, dizziness, and weight loss of 27 kg during a period of three years. Review of symptoms showed moderate to severe adult onset diabetes mellitus, aortic valvular disease, atherosclerotic cardiovascular disease, arterial hypertension, and borderline renal function. Physical findings corroborated the above but were otherwise noncontributory. Laboratory evaluation showed hematocrit, 38%; hemoglobin, 12.8 gm/100 ml; and serum creatinine, 1.3 gm/100 ml; CEA levels were normal. Feces were repeatedly guaiac positive. Sigmoidoscopy and colonoscopy detected mild diverticulosis coli. Radiological upper gastrointestinal and small bowel evaluation were non-diagnostic.

Duodenoscopy was performed with an Olympus P2 endoscope and showed a friable cauliflower shaped mass situated in the medial aspect of the second portion of the duodenum. Microscopy of biopsy specimens showed only focal mucosal inflammation. Five days after the initial unsuccessful biopsy, endoscopic excision of the polypoid mass was performed. Histology of the specimen was con-

sistent with villous adenoma without obvious malignant changes. Postoperative evolution was uneventful. The patient was discharged six days later. No recurrence has been encountered after 13 months.

### Comments

In the past, ideal treatment of benign villous adenoma of the duodenum consisted of complete exci-

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**Review of 45 priorly published cases of villous duodenal adenomata showed a variable therapeutic approach for this condition, ranging from limited local excision to duodenopancreatectomy. Scarcity of followup data complicated meaningful evaluation of therapeutic results. The necessity for individualizing the therapeutic approach to the particular needs of each patient is emphasized.**

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sion of the tumor with a segment of normal adjacent mucosa with or without a full thickness duodenal cuff. Segmental duodenectomy with end-to-end anastomosis was technically feasible and led to excellent results in the treatment of benign villous tumors situated in the first, third, and fourth portion of the duodenum.<sup>1</sup> If malignancy had been completely ruled out, local excisional submucosal resection would have been a good solution.<sup>3</sup> However, it has been very difficult in the past to rule out malignancy, because endoscopic punch biopsies have been notoriously insufficient for diagnosis<sup>4</sup> and could be misleading in some instances as in the presently reported case. Conversely, preoperative endoscopic examination and biopsy detected some small concomitant tumors which could have been missed during celiotomy,<sup>5</sup> if celiotomy without prior endoscopic examination had been performed.

Malignant potential of villous adenomata in colon tumors was first described in 1948 by Sunderland and Bunkley, and has since been reported in about one third of all reported villous duodenal tumors.<sup>1</sup> Considering that in some of these only carcinoma in

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situ was found, the fact remains that invasive adenocarcinoma could be encountered in one of every four reported villous adenomas of the duodenum. Because of the risk of overlooking cancer, duodenopancreatectomy was considered as the treatment of choice by Dayal *et al.* in 1972.<sup>6</sup> Their thesis was questioned by Cooperman *et al.* (1978)<sup>5</sup> because of the high morbidity and mortality accompanying duodenopancreatectomy. According to Cooperman *et al.* duodenopancreatectomy was justified only in presence of proven malignancy and wide local excision should be performed in all other instances.<sup>5</sup>

Tumors of the first, third, and fourth portion of the duodenum were in general amenable to local excision. Villous adenomata of the second duodenal portion, encroaching on the ampulla of Vater, were difficult to excise with this method and in some cases a more radical operation was considered. Analysis of the 17 reported villous adenomata of the second portion of the duodenum showed that local excision could be successfully performed in 11 cases. Duodenopancreatectomy was performed in the remaining six cases, and in four of these, adenocarcinoma was present. There were at least two long term survivors among these four patients.<sup>7</sup>

When malignancy was encountered in a villous duodenal tumor, wide excision<sup>3, 8</sup> or duodenopancreatectomy<sup>9</sup> was performed. Survival data in such cases were scanty. Consequently, no definitive conclusions regarding the choice of operative procedure could be advanced.

Endoscopic resection was contraindicated in the past because of the risk of recurrence and the risk of leaving cancer in place following incomplete excision.<sup>4</sup> Our bibliographic review retrieved only one prior instance of endoscopic removal of villous duodenal adenoma by Haubrich and coworkers in 1973.<sup>10</sup>

Our patient was 91 years old when diagnosis was made. He was indeed the oldest patient ever reported with a villous duodenal adenoma. The location of the tumor in the pancreatic border of the second duodenal portion was a rather unfavorable one for attempting successful wide excision. Surgical risks were prohibitive because of the seriousness of associated diseases, and prospects for long term survival — even in the event of successful postoperative recovery — were dismal because of these associated conditions.

This situation emphasized the necessity for individualizing therapy to the needs of each patient, in the absence of strong guidelines based on wide personal or collective experience on the topic. Of the other two villous adenomata of the duodenum re-

ported by us, local excision was performed in one and duodenopancreatectomy was performed in the other. While the first recovered uneventfully, the second died on the third postoperative day.<sup>2</sup>

Although possible recurrence of villous adenoma or presence of associated malignancy were not definitively ruled out in our 91-year-old patient, he is alive more than one year following adenoma excision. This suggests that endoscopic resection was a viable therapeutic approach for him and could be recommended in similar cases.

### Acknowledgement

Joyce Walsh, Medical Records Department; Marjorie Terrell, Medical Library; and Elizabeth O'Brien, Surgical Education Section, Menorah Medical Center, assisted in the preparation of this paper.

### References

1. Schulten, J. F. Jr.; Ozaru, R. and Beal, L. M.: Villous adenoma of the duodenum: A case report and review of the literature. *Am. J. Surg.* 132:90-96, 1976.
2. Choctaw, W. T. *et al.*: Duodenal-villous adenoma. *Am. Surg.* (in press 1980).
3. Kutin, N.: Villous tumors of the duodenum. *Ann. Surg.* 181:164-168, 1975.
4. Freeny, F. C. and Vimont, T. R.: Villous tumors of the stomach and small bowel. *Arch. Surg.* 113:255-259, 1978.
5. Cooperman, M. *et al.*: Villous adenomas of the duodenum. *Gastroenterology* 74:1295-1297, 1978.
6. Dayal, Y. *et al.*: Villous adenoma of the duodenum. *Am. J. Surg.* 124:394-398, 1972.
7. Bencher, F. and Villiger, K. J.: Two malignant duodenal papillomas: 10 and 14 years cure after duodenopancreatectomy. *Sweiz Med. Wochenschr.* 46:1822, 1968.
8. Ring, E. J. *et al.*: Villous adenoma of the duodenum. *Radiology* 104:45, 1972.
9. Spira, I. A. and Wolff, W. I.: Villous tumors of the duodenum. *Am. J. Gastroenterol.* 67:63-68, 1977.
10. Haubrich, W. S.; Johnson, R. B. and Forsozan, P.: Endoscopic removal of a duodenal adenoma. *Gastrointest. Endosc.* 19:201, 1973.

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### Antibiotic Prophylaxis

(Continued from page 212)

indications for its use and the individual clinical situations the general surgeon will most commonly face; we have discussed briefly some of the antibiotic choices. The use of prophylactic antibiotics has lowered the overall incidence of infection in numerous operations. Used correctly, they help lower morbidity and mortality with little chance for the development of nosocomial infections.

# Recurrent Colon Cancer

## *The Surgical Approach*

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MEANINGFUL DATA on management of recurrent colon cancer are scant because of generalized pessimism regarding efficacy of any active therapeutic approach. Consequently, the exact extent of recurrence is rarely evaluated and adequacy of treatment is open for discussion.<sup>1</sup> We have assessed the incidence of local recurrent colon cancer and the impact on survival of various therapeutic modalities to determine whether an aggressive surgical approach is indicated in the presence of locally recurrent operable disease.

### Material and Methods

The evolution of all colon cancer patients of the Tumor Registry of Menorah Medical Center admitted for primary treatment of colon cancer during the 15-year period 1963-1978 was reviewed. Only those who underwent operative resection for potentially curable colon cancer were evaluated further. There were 278 patients in this category and of these 18 (6%) were reoperated for locally recurring cancer three months to 13 years (mean: 26 months) after initial cancer operation. All survivors were followed until June 30, 1980. Date of death was available for all fatalities in the series. Early reoperation (less than one year after initial treatment) was performed in seven patients; in the remaining 11 patients, the interval between initial operation and operation for recurrent cancer was more than one year.

There were 11 female and seven male patients. Mean age of patients with locally recurring colon cancer was 69 years (range: 46-82 years). In six patients, the tumor was located in the rectum or sigmoid region; in five, in the left colon above the sigmoid loop; and in seven, in the right colon. According to Duke's classification there were four class A, nine class B, and five class C tumors. At reoperation, only diagnostic exploration without resection was performed in six patients. A resective

operation was performed in the remaining 11 cases. Pelvic exenteration was performed in three, sleeve colon resection in seven, and endoscopic transluminal tumor resection in two patients.

### Results

There was no 30-day postoperative mortality after operation for recurrent colon cancer. Mean length of

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**The incidence of locally recurrent colon cancer after initial resection and the impact on survival of resective reoperation were evaluated in 278 patients. It was determined that resective operation was feasible in two of every three reoperated patients and carried no postoperative mortality. Data of this series suggest that length of survival was increased.**

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survival after reoperation was 19 months (range: 2 months to 7½ years). Mean survival following reoperation of rectosigmoid, left colic and right colic tumors was 15, 21 and 13 months respectively. Survival length after reoperation did not depend on length of interval between initial operation and reoperation (*Figure 1*), patient's age, or year of performance of the reoperation. Average length of survival after reoperation in males and females was 32 and 10 months respectively, and total length of survival after initial operation in males and females was 70 and 29 months respectively. Mean survival length after diagnostic reoperation only was six months (range: 2-12 months) and none of these patients was living as of June 30, 1980 (*Table I*). Mean survival length after resective reoperation was 22.6 months (range: 10-90 months) (*Table II*).

Best survival lengths were seen after resective reoperation for left colon cancer (mean: 42 months), whereas rectosigmoid and right colon cancer reoperations were followed by mean survivals of 18 and 15 months respectively. Seven of 12 patients who had resective reoperation were alive and well as of June 30, 1980, after a mean period of 31 months (range: 10-90 months) (*Table III*).

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TABLE I SURVIVAL AFTER DIAGNOSTIC REOPERATION ONLY	
	Survival
Exploratory celiotomy	5 mos (exp)
Exploratory celiotomy	5 mos (exp)
Exploratory celiotomy	9 mos (exp)
Exploratory celiotomy	2 mos (exp)
Exploratory celiotomy	4 mos (exp)
Colonoscopy and biopsy	12 mos (exp)
Mean Survival: 6 mos	

Comments

The incidence of local recurrence after resective operation for adenocarcinoma of the colon varied from 6-28 per cent (*Table IV*). Three hundred thirty-one recurrences were reported in a collective review of six surgical series which included 2099 patients.<sup>1-5</sup> Mean recurrence rate was 16 per cent. According to Cass *et al.*, in 92 per cent of cases recurrence occurred at the operative incision, anastomosis, or structures next to the operative site.<sup>3</sup> According to Ree *et al.*,<sup>1</sup> the mean interval between initial operation and recurrence was 9.5 months, whereas Welch and Donaldson<sup>2</sup> found that two-thirds of all recurrences occurred within the first two years in 177 cases, and according to Cass *et al.*,<sup>3</sup> only 5 per cent of all recurrences occurred after five years. In our series, most recurrences appeared after the first year, and one-third appeared after the second year. This emphasized the need for extending the frequent serial followup investigations at least into the second year. Such followup procedures, to be performed at close intervals in operated colon cancer patients, usually are recommended only during the first year of postoperative evolution. Recurrence of cancer

TABLE II SURVIVAL AFTER RESECTIVE REOPERATION		
Reoperation	Survival	Status as of 6/30/80
Endoscopic resection	19 mos	living
Endoscopic resection	22 mos	living
Colon resection	8 mos	deceased
Colon resection	13 mos	living
Colon resection	11 mos	deceased
Colon resection	10 mos	living
Colon resection	18 mos	deceased
Colon resection	90 mos	living
Colon resection	37 mos	deceased
Pelvic exenteration	19 mos	living
Pelvic exenteration	18 mos	living
Pelvic exenteration	12 mos	deceased
Mean Survival: 25 mos		

after more than ten years was possible, as shown in one patient in our series, who developed local recurrence 13 years following initial operation, thus suggesting that surveillance for early detection of recurrence should probably be continued for the remaining lifespan of apparently cured colon cancer patients. A second-look operation at a prearranged time was advocated by Wangenstein *et al.* in asymptomatic patients.<sup>6</sup> Subsequently Griffen *et al.* reported successful eradication of recurrences in asymptomatic patients during second-look procedures.<sup>7</sup> More recently, Donaldson and Welch questioned the indication for celiotomy in asymptomatic patients because of alleged morbidity, mortality, and expense involved.<sup>2</sup> During the last few years, increasing importance has been given to the diagnostic value of increasing levels of carcinoembryonic antigen in operated colon cancer patients. At this time the question of whether or not reoperation is indicated in asymptomatic patients having rising

TABLE III REPORTED INCIDENCE OF LOCAL RECURRENCE AFTER PRIMARY RESECTIVE OPERATION FOR COLON CANCER			
	Number of Patients	Local Recurrence	Recurrence Rate (%)
Welch and Donaldson	1193	177	15
Cass, Million and Pfaff	280	78	28
Jones and Pollak	278	18	6
Manson, Corman and Coller	152	18	12
Veazey and McBride	122	22	18
Ree, Marks and Moosa	74	18	24
Total	2099	331	16

CEA titers is open for discussion. However, there is general agreement in that such findings command at least a very strong investigation for causes of CEA titer elevation, including the search for local recurrence and metastatic disease. Recurrent disease should be treated, and in our opinion operative resection remains the best available treatment and has led to most long term survivals. If there is any question as to whether the local recurrence is resectable, it should be remembered that resectability and non-resectability can only be determined at operation. Our results showed that reoperation for recurrent colon cancer was safe (0% mortality) and that resection of recurrent disease was feasible in two-thirds of explored patients (12 of 18). A mean survival of 22.5 months was obtained for our patients after resective reoperation. Even better figures were reported by Bacon and Berkley<sup>8</sup> and Kiselow *et al.*<sup>9</sup> Encouraging results have also been reported by Polk and Spratt,<sup>10</sup> and by Berge *et al.*<sup>11</sup> All of these results compare favorably with those of chemotherapy, radiation therapy or combination of both, when used in the absence of reoperation.<sup>2</sup> A discussion on the selection of the type of operative resection to be used is beyond the scope of this paper. The fact that good results were obtained with either pelvic exenteration, simple resection, sleeve resection and endoscopic resection, suggests that an individual approach be considered for each case, taking into account local extension of the disease, general condition of the patient, associated diseases, individual preferences, and the experience of the surgical team.

After successful reoperation, patients should be followed according to a schedule similar to the one used after initial operation.

Our protocol presently consists of monthly physical examination during the first two years including vaginal and rectal examination; urine analysis; blood chemistry, including liver function tests; blood cell count, serum CEA level; chest x-ray; needle biopsy of all suspicious areas; and curettage and biopsy of every suspicious sinus tract.<sup>1</sup> After the second year, physical examination and tests are performed every three months for one year, every six months during the fourth and fifth year, and yearly thereafter. Moreover, barium enema is performed every six months during the first three years and yearly thereafter. Colonoscopy and intravenous pyelogram are recommended once every year.

## Acknowledgement

Joyce Walsh, Medical Records Department; Jean Booy, Tumor Registry; Marjorie Terrell, Medical Library; and Elizabeth O'Brien, Surgical Education Section, Menorah Medical Center, assisted in the preparation of this paper.

## References

1. Ree, P. C. *et al.*: Rectal and rectosigmoid carcinoma: Physician's prediction of local recurrence. *J. Surg. Res.* 18:1-7, 1975.
2. Welch, J. P. and Donaldson, G. A.: Detection and treatment of recurrent cancer of the colon and rectum. *Am. J. Surg.* 135:505-511, 1978.
3. Cass, A. W.; Million, R. R. and Pfaff, W. W.: Patterns of recurrence following surgery alone for adenocarcinoma of the colon and rectum. *Cancer* 37(G):2861-2865, 1976.
4. Manson, P. N.; Corman, M. L.; Collier, J. A. and Veidenheimer, M. D.: Anastomotic recurrence after anterior resection for carcinoma: Lahey Clinic experience. *Dis. Colon Rectum* 19:219-224, 1976.
5. Veazey, P. R. and McBride, C. M.: Pelvic recurrence of cancer after abdominoperipheral resection of the rectum. *South. Med. J.* 72:1545-1547, 1979.
6. Wangenstein, O. H. *et al.*: An interim report about the "second look" procedure for cancer of the stomach, colon, rectum and for "limited intraperitoneal carcinomatosis." *Surg. Gynecol. Obstet.* 99:257, 1954.
7. Griffen, W. O.; Humphrey, L. and Sosin, H.: The prognosis and management of recurrent abdominal malignancies. *Curr. Probl. Surg.*, April 1969.
8. Bacon, H. E. and Berkley, J. L.: The rationale of resection for recurrent cancer of the colon and rectum. *Dis. Colon Rectum* 2:549-554, 1959.
9. Kiselow, M.; Bricker, H. R. and Butcher, E. M.: Results of radical surgical treatment of advanced pelvic cancer. *Ann. Surg.* 166:428-434, 1967.
10. Polk, H. C. and Spratt, S. Jr.: The results of treatment of perineal recurrence of cancer of the rectum. *Cancer* 43:952-955, 1979.
11. Berge, I. *et al.*: Carcinoma of the colon and rectum in a defined population. *Acta Chir. Scand. (Suppl.)* 1:1973. Cited by Welch, J. P. and Donaldson, G. A.: Detection and treatment of recurrent cancer of the colon and rectum. *Am. J. Surg.* 135:505-511, 1978.

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## Renovascular Hypertension

(Continued from page 228)

10. Dotter, C. T. and Judkins, M. P.: Description of a new technique and a preliminary report of its application. *Circulation* 30:645-670, 1964.
11. Fry, W. J.; Brink, B. E. and Thompson, N. W.: New techniques in the treatment of extensive fibromuscular disease involving the renal arteries. *Surgery* 68:959-967, 1970.





## Current COMMENT

H. B. LINDSLEY, M.D., *Editor*

### *Heat Stroke and Allied Disorders*

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THE DEVASTATING consequences of a prolonged heat wave were graphically manifested during the summer of 1980. From July 4 to July 20, maximum daily temperatures in Kansas City, Missouri, were 38.9C (102F) or higher. A preliminary review of hospital and emergency room records for this period by the Center for Disease Control disclosed 454 cases of heat-related illness in Kansas City residents and 148 heat-related deaths. On a single day — July 11 — when the maximum temperature reached 41.7C (107F), there were 59 cases of heat-related illness and 23 deaths. By way of contrast, there were no heat-related admissions or emergency room visits

recorded in Kansas City, Missouri hospitals during the entire month of July 1979.

The majority of heat-related illnesses and deaths were in all likelihood due to heat stroke, one of several disorders associated with high environmental temperatures (*Table I*). Although numerous heat stroke victims are identified and treated in hospitals, most deaths occur in the home. This article addresses the pathogenesis, diagnosis, treatment, and prevention of heat syndromes.

#### Physiology of Heat Regulation

The body attempts to maintain a constant temperature despite changes in the environment. In terms of temperature regulation, the body can be regarded as a central core protected by outer layers modulating heat loss and gain (*Figure 1*). Body temperature reflects core heat production plus heat gained or minus heat dissipated at the shell surface.

Under normal conditions core temperature is

TABLE I  
DISORDERS ASSOCIATED WITH HIGH ENVIRONMENTAL TEMPERATURES

<i>Disorder</i>	<i>Major Clinical Features</i>	<i>Therapy</i>
Heat Stroke	CNS dysfunction; rectal temperature $\geq 105^{\circ}\text{F}$ ; hot, dry skin	Immediate, rapid cooling; vigorous supportive care; management of life-threatening cardiac, circulatory, renal, hepatic and hematopoietic complications.
Heat Exhaustion	Mild CNS dysfunction; brief collapse	Removal to cool environment; oral water and salt replacement
Heat Cramps	Painful, skeletal muscle spasms during or after exercise	Oral or IV replacement of NaCl
Heat Stress Nephropathy	Exercise-induced rhabdomyolysis; acute renal failure	IV fluid challenge; maintain high urine output; alkalinization of urine

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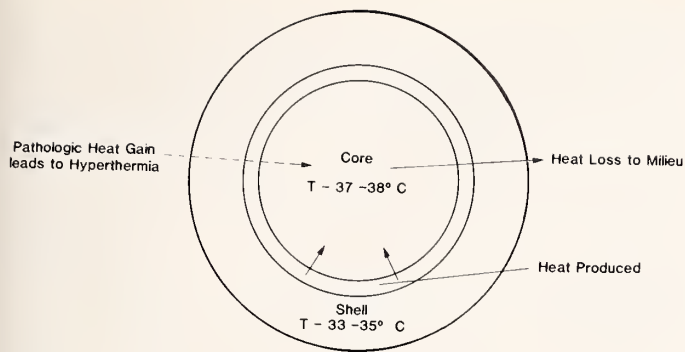


Figure 1. The body can be viewed as a core protected by outer layers that modulate heat loss and gain.

maintained at 37°C with shell temperatures 3.5-4.5°C lower. Core heat is generated by cellular metabolism regulated, in part, by endocrine activity. Shell temperature is determined by ambient air temperature, velocity and humidity, and by regional blood flow. The subcutaneous fat layer provides insulation between core and shell. The intermediate zone of skeletal muscle can generate large amounts of heat through exercise or shivering.

The hypothalamic thermoregulatory center normally maintains core temperature within narrow limits through a variety of integrative processes. The hypothalamus is sensitive to changes in the temperature of the perfusing blood and to a convergence of impulses arising from cutaneous, visceral, and central nervous system (CNS) thermoreceptors. The hypothalamus — via autonomic, endocrine, and neuromuscular pathways — initiates several cooling mechanisms when incoming signals indicate a rise in body temperature. Muscle shivering is inhibited. An increase in the rate of sweat production fosters heat loss by evaporation. Cutaneous vasodilatation and a rise in cardiac output increase cutaneous circulation accelerating heat loss via radiation and convection.

Elevated core temperatures may occur by active or passive processes or by disruption of normal temperature regulating mechanisms. Heavy physical exertion (especially in unacclimatized individuals), elevated metabolic rates due to endocrine dysfunction, or release of endogenous pyrogens may increase core body temperature. Accumulation of shell heat from the environment often contributes significantly to body temperature and may be magnified by impairment of heat dissipating mechanisms. These include cessation of sweating, diminished shell blood flow, impermeable clothing, or atmospheric conditions of combined high humidity and temperature. Dehydration, depressed cardiac output, or cer-

tain drugs may further contribute to diminished heat dissipation.

### Heat Stroke

Heat stroke is a medical emergency. It generally occurs in one of two forms: (1) classic heat stroke in the elderly or debilitated; or (2) exertional heat stroke in otherwise healthy individuals.

The hallmark of classic heat stroke is the triad of profound CNS dysfunction, a rectal temperature of 40.6°C (105°F) or greater and, usually, an absence of sweating. Untimely cessation of sweating, the cause of which remains enigmatic, is a key factor in the pathogenesis of heat stroke. Classic heat stroke is ordinarily unrelated to exertion. It is considerably more common than exertional heat stroke and occurs during extended heat waves, especially those accompanied by high humidity. A number of factors increase the risk for development of the classic variety of heat stroke (*Table II*). Advanced age and debilitating illness are major risk factors and, when coupled with solitary living, provide an ideal setting for heat stroke. It was not unusual during July 1980 to find elderly heat stroke victims bundled up in heavy clothing, living alone in poorly ventilated quarters. The importance of age as a risk factor is highlighted in preliminary figures from the Center for Disease Control for 1980. The rate of heat stroke in persons 65 years of age or older was 12.46/10,000 compared to 0.90/10,000 in those under 65 years. Diuretic-induced volume depletion, salt loss, and potassium depletion all appear to play a role in increasing the risk of heat stroke. The vasodilatation produced by alcohol promotes net heat gain when body temperature is exceeded by ambient temperature. Obesity, as well as heavy clothing, impairs body heat loss. Anticholinergic drugs inhibit sweat production, and phenothiazines blunt the response of

TABLE II  
RISK FACTORS IN DEVELOPMENT OF  
CLASSIC HEAT STROKE

Advanced age
Chronic illness
Solitary living
Alcoholism
Obesity
Drugs
Diuretics
Anticholinergics
Phenothiazines
Infancy



the hypothalamus to elevated core body temperature.

Recognition of classic heat stroke is reasonably straightforward given the characteristic triad of findings. CNS dysfunction can manifest itself as confusion, agitation, lethargy, or coma. Impaired cerebellar or motor function may also be present. Because of the protean nature of the neurologic findings and because anhidrosis does not always occur, heat stroke may not be obvious and is a diagnosis to be considered in any patient developing altered mental status during environmental heat stress.

Exertional heat stroke typically is seen in military recruits during rigorous training exercises, inexperienced distance runners, heavy construction workers, or football players during the early part of the season. Lack of prior acclimatization commensurate with the intense level of activity is a prime factor in predisposing healthy individuals to exertional heat stroke. Heat generated during prolonged, strenuous exercise overloads the heat-dissipating mechanisms and results in a rapid rise in core temperature. The clinical manifestations of exertional heat stroke are similar to the classic variety with one notable exception — the ability to sweat usually remains intact in exercise-induced heat stroke victims. A history of intense physical activity is a key element in diagnosis.

Heat stroke is an emergency requiring prompt and vigorous treatment. Most organ damage occurs as the result of direct thermal injury. Areas particularly vulnerable include the CNS, liver, vascular endothelium, and hematopoietic system. The immediate goal of therapy is rapid reduction of body temperature since mortality is directly related to the duration of hyperthermia. A host of different methods for rapid lowering of body temperature have been suggested, attesting to the fact that a simple, safe, and convenient procedure has not yet been devised. Most authorities advise immersion in an ice water bath with vigorous skin massage to counteract cutaneous vasoconstriction. Although cumbersome with a comatose patient and uncomfortable for a conscious one, this procedure is both speedy and effective. The second best approach is continuous sponge bathing with ice cold water. A cooling blanket is relatively ineffective and mentioned only to discourage its use. Measures to promote cooling should be discontinued once core temperature has been reduced to 38.9°C (102°F) to obviate hypothermic overshoot.

Close monitoring and aggressive supportive care cannot be overemphasized. Temperature should be continuously followed with an electronic rectal or

tympanic probe. Other vital signs should be recorded at 15-minute intervals and — because arrhythmias often occur — cardiac monitoring with wrist electrodes is desirable. Hemodynamic assessment is equally important since circulatory insufficiency frequently accompanies heat stroke. Urine output should be followed closely to assess volume status as well as the possible development of acute renal failure.

General supportive measures afforded any seriously ill, comatose patient apply to heat stroke victims as well. Maintenance of adequate oxygenation, correction of fluid and electrolyte deficits, treatment of shock when present, and anticipation of renal failure are particularly important. In instances where serious volume depletion exists, it should be treated initially with intravenous, isotonic electrolyte solutions to attain a urine output in excess of 30 cc/hr. Serial testing to detect bleeding diatheses, especially disseminated intravascular coagulation, can be useful since bleeding disorders are not uncommon in heat stroke. Serum enzyme determinations (SGOT, SGPT, CPK) can estimate the extent of thermal or hypoxic injury to liver and muscle.

### Heat Exhaustion

Heat exhaustion or heat prostration is a much less serious disorder characterized by weakness, dizziness, headache, nausea, vomiting, and sudden brief collapse. In contrast to heat stroke, the skin is cool and wet and the individual is afebrile. The pathogenesis of this disorder is volume depletion secondary to inadequate replacement of water and salt lost through sweating. Recovery is usually spontaneous if the individual is moved to a cool area and allowed to rest. Oral water and salt repletion suffices in most cases.

### Heat Cramps

Heat cramps are a relatively innocuous condition. Painful, skeletal muscle spasms develop during or following strenuous exercise in individuals whose level of physical fitness will permit sustained physical exertion. The likely cause of heat cramps is salt depletion; response to replacement of sodium and chloride is dramatic.

### Heat Stress Nephropathy

Acute renal failure in the absence of heat stroke occasionally occurs in athletes and military recruits entering a period of vigorous training in hot climates. Skeletal muscle injury is a consistent finding. The rhabdomyolysis is followed not only by myoglobinuria but also by increased production and ex-

cretion of uric acid. Both myoglobinuria and uricosuria have been implicated in the pathogenesis of the renal failure. The treatment approach is similar to that for acute uric acid nephropathy — namely, maintenance of high urinary flow rates and alkalization of the urine.

## Prevention

The incidence of severe heat illness in this country could be sharply reduced by educating the public as well as high-risk individuals regarding simple measures shown to be effective in reducing heat stress. Adoption of the following guidelines during heat waves would prevent most cases of classic heat stroke:

- Maintenance of a cool environment with fans, air conditioning, or adequate ventilation
- Cool baths or showers one or more times a day
- Lightweight, loose-fitting clothing
- Avoidance of physical exertion during the hottest part of the day
- Daily visits to the elderly and the demented by neighbors
- Increased fluid intake
- Cautious use of drugs known to predispose to heat illness

Similarly, most exertional heat stroke can be prevented by adherence to a few basic rules. Novice runners, football coaches, and those conducting military training should be reminded of the importance of a more gradual approach to physical conditioning allowing sufficient time for acclimatization. Episodes of intense physical activity far in excess of prior conditioning should be avoided. Finally, extreme exertion during the hottest part of the day should be discouraged.

## Self-Assessment Questions

1. Mortality in heat stroke is directly related to the duration of hyperthermia. (T or F)
2. Cessation of sweating occurs frequently in exertional heat stroke. (T or F)
3. Advanced age is one of the most important risk factors in development of classic heat stroke. (T or F)
4. Acclimatization of athletes to heat stress should ordinarily be carried out as rapidly as possible in order to prevent subsequent heat-related illness. (T or F)
5. A heat stroke victim should be placed on a cooling mattress immediately upon arrival in the emergency room. (T or F)

*(Answers on page 225)*

## Intra-Aortic Balloon Pump

*(Continued from page 230)*

er, it should be used selectively for specific indications, especially in the pre-bypass period. It is not necessary to use the IABP prophylactically in patients with main left coronary artery disease, unstable angina, or decreased left ventricular function. In these patients, careful anesthetic management, adequate monitoring, and appropriate pharmacological intervention can be used instead of the IABP. This accounts for our decreasing use of the IABP in cardiac surgery.

## Summary

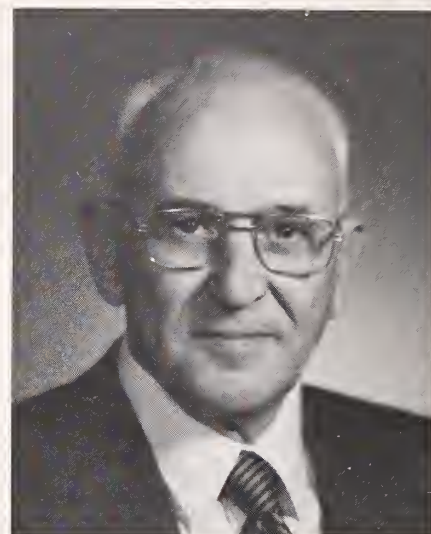
The experiences with the intra-aortic balloon pump at Wesley Medical Center are reviewed during the past 24 months. Of the 900 cardiopulmonary bypass patients, we have used the IABP 28 times. In the majority of cases its use is restricted to stabilizing the patient post-cardiopulmonary bypass. It is infrequently used preoperatively to stabilize complications of acute myocardial infarction or pre-infarction angina. Our stance on the counterpulsation device is one of conservative use. We believe it to be most beneficial to aid in weaning people from cardiopulmonary bypass.

A list of suggested reading is available from the authors.



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## *The President's Message*



The Kansas Medical Society was incorporated in the year 1859. From its very beginning, as now, it has been concerned about and strived to improve the health and health care of the people of Kansas. The Kansas Medical Society, although initially small and not widely influential, immediately addressed itself to such matters as the better education of practitioners, their licensure, the elimination of quacks, and the creation of a board of medical examiners. Also, intense attention was directed toward improved sanitation, public health measures, and other areas of need. Does this suggest that we have made a complete circle? Hardly. The Kansas Medical Society has a continuously rich and colorful heritage of leadership and service to the citizens of Kansas. It is the resolve of your president, executive committee, and council to build upon past achievements and to continue working for improvement. To achieve this, however, will require dedication, aggressiveness, and the best from all of us.

Faternally,

*Herman W. Hiesterman M.D.*  
President



## *Challenge and Opportunity*

It was a refreshing touch coming, as it did, after the almost unanimous chorus of agonized outcries that have met the Reagan administration's proposals for budget cuts. It was a statement in a letter from the board chairman to the stockholders of a corporation (no, we aren't among them although we wish we were) stating that while the corporation felt that some of the proposals would be detrimental to it in the short term, the long term benefits were so necessary to the economy that they went along with the whole thing. Thus, there was at least a momentary interruption in the voices (mostly from the left) that the world (or that part of it of concern to each voice) was coming to an end.

Admittedly, the determination (and courage) of the administration was somewhat startling to a public not used to a forthright and prompt confrontation with the unpleasant forms of campaign promises, having been nurtured on a prolonged diet of evasions, dissemblance, and response to pressure from candidates once they are seated in office. It is probable that the administration planners themselves developed their budget-cutting program somewhat beyond their own expectations with the thought that, after the politically necessary compromise was reached, they would have rather more than less of what they wanted. By the same token, the objectors and the advocates of items marked for the economic abattoir overstate the dire and inhuman consequences of such actions, hoping to salvage more than they would by an attitude of pained acquiescence. (At this writing, the House has yet to take action but can be counted on not to subscribe to the Administration's full pitch — and three Republican members of the Senate Budget Committee have just won free tickets to a re-orientation course since, unelephant-like, they seem to have forgotten what they came for.) What we are seeing, of course, is an exercise in the democratic method — noisy certain-

ly, messy at times, but leading usually to the best accommodation of diverse feelings and needs. It is necessary because we are all totalitarians at heart and we must constantly remind ourselves that the apparent inefficiency and dissension of democracy are all that separate us from completely signing our fates over to others.

The public reaction is due not only to an understandable bemusement at the extent of the excision process and the stern reduction in available monies but also the proposition that whatever is to be done to meet many of the surviving activities will be increasingly the responsibility of the individual as the execution is brought closer to home. It has been standard practice during the years of proliferating social programs to assume that paying the tax bill, however unwillingly, resulted in granting the folks in Washington permission to collect the funds whereupon the home folks would go to work to get them back — less the cost of the trip. The prospective plan will apparently effect some saving in the process by taking advantage of the bulk rate. But now, as part of the reckoning, the individual will be more directly involved in which programs are kept, which are abandoned, and how the funds will be divided since it will be done closer to home.

During the past 50 years of burgeoning welfare, no group has complained more insistently about the methods than the physicians, and whatever comfort they derive from the hope of bringing the economy under control should be tempered by the realization that hard decisions are coming up. Changes in medical practice have been extensive and multifactorial: revolutionary changes within have altered the constitution of the medical function and changes from without have altered its face. Probably foremost in the profession's complaints has been the intrusion of social welfare forces where it felt it should have had the primary voice. We have the



temerity to suggest that the profession should now be ready to take its place in filling the voids that will be created by whatever retrenchments are accomplished. Benefits have been achieved for both medical practice and society during these years and if these are not to be lost or seriously impaired, the medical profession must play a vital role by assuming the obligation to sustain them. This is the opportunity and the challenge.

It will be interesting to see how the medical community meets these problems as austerity becomes fact. The question is not so much dollars — how to get them and where to spend them — but to what extent the temper of the medical profession has really changed during these years — or, more accurately, not changed but held to the traditional convictions. To consider only one feature (although no one is really exclusive of the others), there is the matter of the provision of medical care for those unable to provide it for themselves. Expenditures for medical care can be reduced in only a few ways: reduction of the number of individuals provided for; reduction of the services provided; or reduction of the remuneration to the providers. The physician is the common denominator since he is the one who will directly confront each of these in his practice. And ultimately any failure of these individuals to receive care will be blamed on the profession. In short, physicians need not look to cutbacks in care as a relief from the objectionable features of the current system — only a shifting of the angle of focus.

At one time, such problems were met largely as a personal project — the physician simply contributed his services to the needy as necessary. Then the more affluent members of society underwrote that care through their direct contributions or provision of facilities. Then society acknowledged a more formal obligation (beyond the protection of itself and its sensibilities as in the case of pest houses and mad houses). But the past 50 years have brought such a variety and extent of social “reforms” that there is a real question of how the profession will meet the new situation. It is not a matter of turning the clock back 50 years as many of the liberal tongues have assured us is the administration’s intent. It is a question of whether the often repeated declarations of medical virtue — patient concern, the physician knows best, dedication to the best care for all, abhorrence of government involvement — have been vocal reflex or a sincere expression of professional intent — if only social incursions and government regulations could be eliminated.

There is a more profound change in direction of function confronting the profession than just the

readjustment of social priorities or financial mechanisms. Rather, the fundamental question of whether the physician character is capable of resuming its self-declared obligation of providing care for those who are in need but now, by the necessary curtailments, are no longer provided for. Congressional efforts of whatever degree will not be legislating the people out of existence — will, in fact, be increasing the group for which care must be provided in some unspecified form. It is this that provides the profession with the opportunity to display its professional qualities.

It is an imposing challenge, no less so because of the irony that it will be the product of one of the conditions organized medicine has always sought to achieve — the reduction of the federal presence in medical service. But the opportunities will require acting on responsibilities, or the reaction will be more damaging than it has been under the socialized patterns of these last years. The system has provided the physician with some remuneration for practically all patients. This remuneration has usually been only partial in the eyes of physicians and has been achieved at the cost of a stifling program of bureaucratic paperwork and regulations. It has theoretically established equivalent availability and quality of medical care for all persons. But the opportunity lies not in the profession’s ability simply to eliminate the principle because it has objected to the method. It lies in the need to implement a system medically effective, socially equitable, and economically feasible to fill the void left by the cutting process. This will require a plan of sufficient stability yet flexibility to assure its continuation under stringent circumstances even if physicians have to maintain it by their own subsidy. It will require a commitment by the profession to meet the demands. But the profession has been saying all along that this is its purpose and intent, it just didn’t like the methods thrust upon it. This calls to mind various plans from the days before the welfare behemoth took over. The profession negotiated with those having the legal and social obligation to provide medical care for the disadvantaged, assumed the responsibility for the provision of the service, and prorated the available money to the individuals providing it. The success of these plans came from the determination of physicians to make them work even though the remuneration was often negligible.

The history of organized medicine in the past 50 years has been one of reaction. Its conviction of its rightness (an attitude not without merit but requiring humility as a leavening) has confronted most of the social changes with resistance and finally a qualified

# Examine Me.

During the past several years, I have heard my name mentioned in movies, on television and radio talk shows, and even at Senate subcommittee sessions. And I have seen it repeatedly in newspapers, magazines, and yes, best-sellers. Lately, whenever I see or hear the phrases "overmedicated society," "overuse," "misuse," and "abuse," my name is one of the reference points. Sometimes even *the* reference point.

These current issues, involving patient compliance or dependency-proneness, should be given careful scrutiny, for they may impede my overall therapeutic usefulness. As you know, a problem almost always involves improper usage. When I am prescribed and taken correctly, I can produce the effective relief for which I am intended.

Amid all this controversy, I ask you to reflect on and re-examine my merits. Think back on the patients in your practice who have been helped through your clinical counseling and prudent prescriptions for me. Consider your patients with heart problems, G.I. problems, and interpersonal problems who, when their anxiety was severe, have been able to benefit from the medication choice you've made. Recall how often you've heard, as a result, "Doctor, I don't know what I would have done without your help."

You and I can feel proud of what we've done together to reduce excessive anxiety and thus help patients to cope more successfully.

If you examine and evaluate me in the light of your own experience, you'll come away with a confirmation of your knowledge that I *am* a safe and effective drug when prescribed judiciously and used wisely.

For a brief summary of product information on Valium (diazepam/Roche)® , please see the following page. Valium is available as 2-mg, 5-mg and 10-mg scored tablets.



# Valium® diazepam/Roche

**Before prescribing, please consult complete product information, a summary of which follows:**

**Indications:** Management of anxiety disorders, or short-term relief of symptoms of anxiety; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome; convulsive disorders (not for sole therapy).

The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other anti-depressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported, should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

**Dosage:** Individualize for maximum beneficial effect. **Adults:** Anxiety disorders, symptoms of anxiety, 2 to 10 mg b.i.d. to q.i.d., alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. **Geriatric or debilitated patients:** 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) **Children:** 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

**Supplied:** Valium® (diazepam/Roche) Tablets, 2 mg, 5 mg and 10 mg—bottles of 100 and 500; Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25, and in boxes containing 10 strips of 10; Prescription Paks of 50, available in trays of 10.

capitulation, then public declaration that it had been working in that direction all the time. Whatever the desirable effects, the character of the social force has been counter to much that has been traditional in medical practice which made it an easy target for public declarations that self-interest was its real concern. Even when physicians have initiated some medically and socially desirable effort, society has discounted it as being, above all, favorable to them.

If this assessment of the medical character seems unfair or at least excessive, it points to an attitude that must be taken into account in contemplating the "opportunity" that accompanies the approaching changes. The prospective stringencies have been proclaimed by the antagonists as the death of social accomplishments of the past century. This is the counterpart of the thinking that has led many physicians to read into each social change the annihilation of the profession. It has, however, always found a way to accommodate — administratively and financially — to the changes thrust upon it. It is still alive and reasonably well although different — just as society will be alive and can be assured of being well if its various segments will accept their particular responsibilities and find different methods after the federal spigot is closed.

The challenge and opportunity lie not so much in mechanisms and methods — although they will obviously be necessary to the implementation — as in attitude and purpose. These will be demonstrated in the profession's efforts to avoid loss of viable and valuable programs (even some it may have initially opposed) during the cutting process but also, and more importantly, the support by organizational subsidy if necessary to demonstrate to a skeptical public what physicians have been claiming all these years. Our comments can be readily dismissed as simplistic, naive, unworkable, and so on, but it has been a long time since the circumstances have offered not just challenges — in one form or another, they have been present at every turn — but such a strong case for opportunity.

It will be interesting to see what happens. —  
D.E.G.

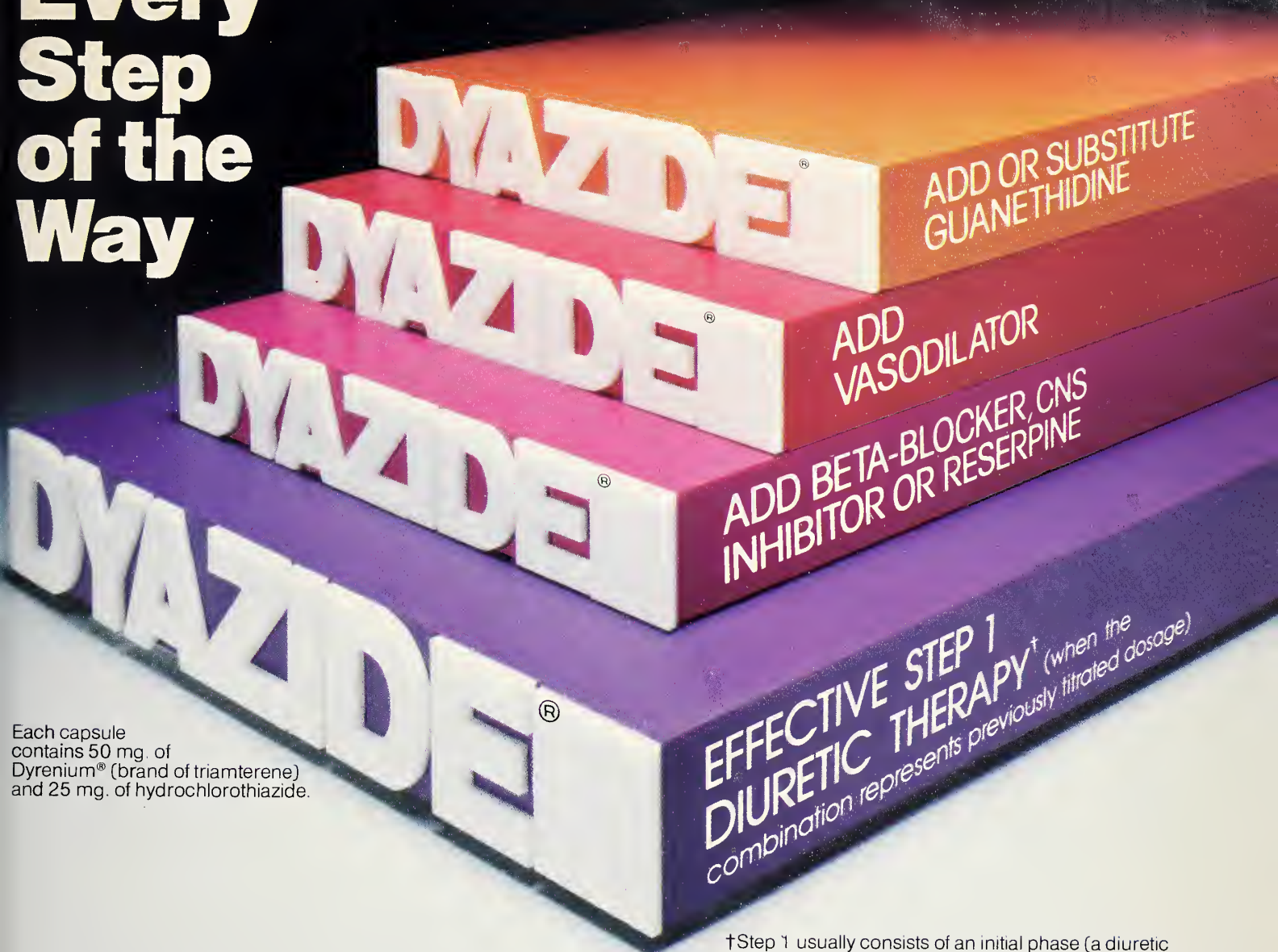


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# In Hypertension\* ...When You Need to Conserve K<sup>+</sup>

## Every Step of the Way



Each capsule contains 50 mg. of Dyrenium® (brand of triamterene) and 25 mg. of hydrochlorothiazide.

†Step 1 usually consists of an initial phase (a diuretic alone), a titration phase (dosage adjustment and/or addition of a K<sup>+</sup> supplement or K<sup>+</sup>-sparing agent), and a maintenance phase (a diuretic alone or in combination with a K<sup>+</sup> supplement or K<sup>+</sup>-sparing agent).

Serum K<sup>+</sup> and BUN should be checked periodically (see Warnings).

Before prescribing, see complete prescribing information in SK&F Co. literature or PDR. The following is a brief summary.

### WARNING

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

**Contraindications:** Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

**Warnings:** Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K<sup>+</sup> levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K<sup>+</sup> intake. Associated widened QRS complex or arrhythmia requires prompt additional therapy. Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and tri-

amterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

**Precautions:** Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Watch for signs of impending coma in severe liver disease. If spironolactone is used concomitantly, determine serum K<sup>+</sup> frequently; both can cause K<sup>+</sup> retention and elevated serum K<sup>+</sup>. Two deaths have been reported with such concomitant therapy (in one, recommended dosage was exceeded; in the other, serum electrolytes were not properly monitored). Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis and aplastic anemia have been reported with thiazides. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia, although uncommon, has been reported. Corrective measures should be instituted

cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

**Adverse Reactions:** Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances. Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and, rarely, allergic pneumonitis have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis and of impotence have been reported with the use of 'Dyazide', although a causal relationship has not been established.

**Supplied:** Bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (intended for institutional use only); in Patient-Pak™ unit-of-use bottles of 100.

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# Motrin<sup>®</sup> vs aspirin w/codeine...

(ibuprofen)





# compare the analgesic effect

A Motrin 400 mg dose relieved postsurgical dental pain as effectively as a combination of 650 mg aspirin and 60 mg codeine (two aspirin-with-codeine No. 3 tablets) in a study of 129 patients.

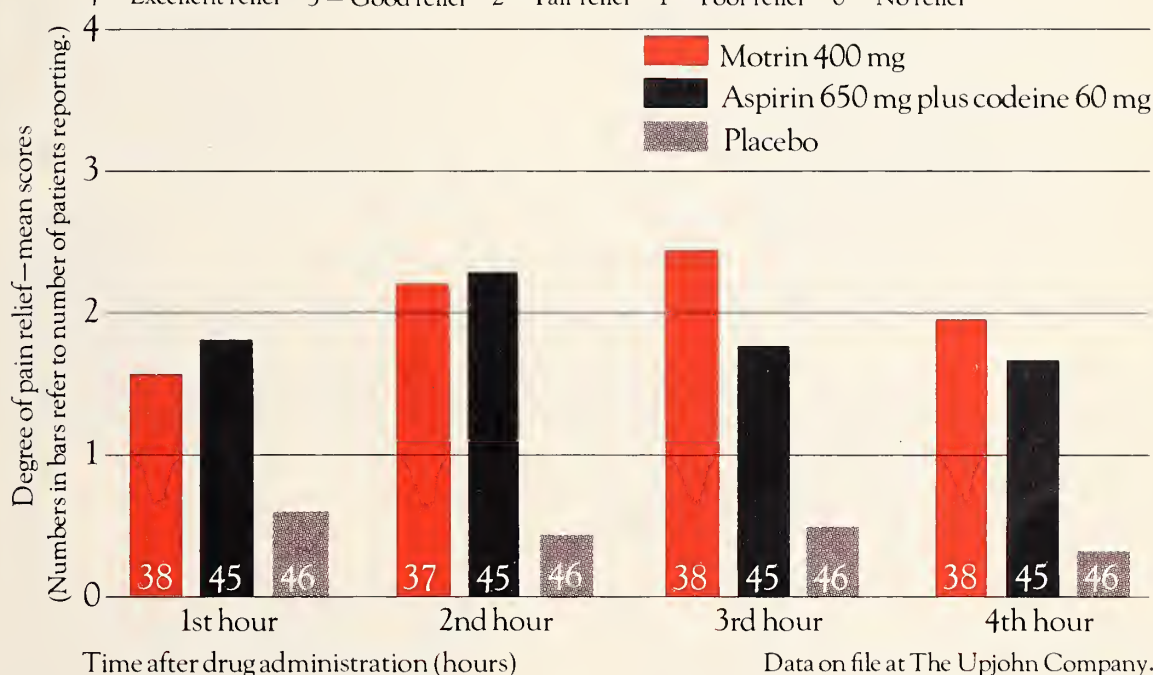
In this double-blind, placebo-controlled, randomized study, no statistically significant difference in relief of pain was noted at 1, 2, and 4 hours between the Motrin and aspirin-with-codeine groups... with Motrin being significantly more effective ( $p = 0.03$ ) at the three-hour interval.

Active treatment was significantly more effective ( $p < 0.0001$ ) than placebo at all time intervals.

## Comparison of pain relief

### Motrin vs aspirin-codeine combination

4 = Excellent relief 3 = Good relief 2 = Fair relief 1 = Poor relief 0 = No relief



One tablet q4-6h prn

For relief of mild to moderate pain:

**Motrin<sup>®</sup> 400mg** TABLETS  
ibuprofen, Upjohn

- Not a narcotic • Not addictive • Not habit forming • Nonscheduled
- Acts peripherally • Relieves pain rapidly • Relieves inflammation • Indicated in acute and chronic pain • Well tolerated (The most common side effect with Motrin is mild gastrointestinal disturbance.)

Please turn the page for a brief summary of prescribing information.

**Upjohn**



# Motrin® (ibuprofen)

## now proved an effective analgesic for mild to moderate pain

**Motrin® Tablets** (ibuprofen, Upjohn)

**Indications and Usage:** Relief of mild to moderate pain.

Treatment of signs and symptoms of rheumatoid arthritis and osteoarthritis during acute flares and in long-term management. Safety and efficacy have not been established in Functional Class IV rheumatoid arthritis.

**Contraindications:** Individuals hypersensitive to it, or with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to aspirin or other nonsteroidal anti-inflammatory agents (see WARNINGS).

**Warnings:** Anaphylactoid reactions have occurred in patients with aspirin hypersensitivity (see CONTRAINDICATIONS).

Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Ulceration, perforation, and bleeding may end fatally. An association has not been established. Motrin should be given under close supervision to patients with a history of upper gastrointestinal tract disease, only after consulting ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be tried. If Motrin must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

**Precautions:** Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If these develop, discontinue Motrin and the patient should have an ophthalmologic examination, including central visual fields.

Fluid retention and edema have been associated with Motrin; use with caution in patients with a history of cardiac decompensation.

Motrin can inhibit platelet aggregation and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy should have therapy tapered slowly when Motrin is added.

**Drug interactions.** *Aspirin:* Used concomitantly may decrease Motrin blood levels.

*Coumarin:* Bleeding has been reported in patients taking Motrin and coumarin.

**Pregnancy and nursing mothers:** Motrin should not be taken during pregnancy nor by nursing mothers.

### Adverse Reactions

#### *Incidence greater than 1%*

**Gastrointestinal:** The most frequent type of adverse reaction occurring with Motrin is gastrointestinal (4% to 16%). This includes nausea\*, epigastric pain\*, heartburn\*, diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of the GI tract (bloating and flatulence). **Central Nervous System:** Dizziness\*, headache, nervousness. **Dermatologic:** Rash\* (including maculopapular type), pruritus. **Special Senses:** Tinnitus. **Metabolic:** Decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS).

\*Incidence 3% to 9%.

#### *Incidence less than 1 in 100*

**Gastrointestinal:** Upper GI ulcer with bleeding and/or perforation, hemorrhage, melena. **Central Nervous System:** Depression, insomnia. **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme. **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure. **Special Senses:** Amblyopia (see PRECAUTIONS). **Hematologic:** Leukopenia, decreased hemoglobin and hematocrit.

#### *Causal relationship unknown*

**Gastrointestinal:** Hepatitis, jaundice, abnormal liver function. **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities. **Dermatologic:** Alopecia, Stevens-Johnson syndrome. **Special Senses:** Conjunctivitis, diplopia, optic neuritis. **Hematologic:** Hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes. **Allergic:** Fever, serum sickness, lupus erythematosus syndrome. **Endocrine:** Gynecomastia, hypoglycemia. **Cardiovascular:** Arrhythmias. **Renal:** Decreased creatinine clearance, polyuria, azotemia.

**Overdosage:** In cases of acute overdosage, the stomach should be emptied. The drug is acidic and excreted in the urine, so alkaline diuresis may be beneficial.

**Dosage and Administration:** Rheumatoid arthritis and osteoarthritis, including flares of chronic disease: Suggested dosage is 300, 400, or 600 mg t.i.d. or q.i.d.

Mild to moderate pain: 400 mg every 4 to 6 hours as necessary for relief of pain.

Do not exceed 2400 mg per day.

**Caution:** Federal law prohibits dispensing without prescription.

For additional product information, see your Upjohn representative or consult the package insert.

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**Acute pain  
is no laughing matter.**

**The first prescription for  
the first days of acute pain**  
**Empirin®  $\bar{c}$  Codeine #3**


Each tablet contains: aspirin, 325 mg; plus codeine phosphate, 30 mg, (Warning — may be habit-forming). 

**For the millions of patients who need the potency  
of aspirin and codeine for their acute pain.**

The pain of fractures, strains, sprains, burns and wounds is at its peak during the first three to four days following trauma. The potent action of Empirin  $\bar{c}$  Codeine begins to work within 15 minutes of oral administration, an important advantage during this acute pain period. Empirin  $\bar{c}$  Codeine has unique bi-level action to attack pain at two critical points: peripherally at the site of injury and centrally at the site of pain awareness.

For the most effective dosage in treating acute pain, begin with... two tablets of Empirin  $\bar{c}$  Codeine #2 or #3, every four hours. Titrate downward as pain subsides.

**EMPIRIN® with Codeine**

**DESCRIPTION:** Each tablet contains aspirin (acetylsalicylic acid) 325 mg plus codeine phosphate in one of the following strengths: No. 2 — 15 mg, No. 3 — 30 mg, and No. 4 — 60 mg. (Warning — may be habit-forming) 

**CONTRAINDICATIONS:** Hypersensitivity to aspirin or codeine.

**WARNINGS:**

**Drug dependence:** Empirin with Codeine can produce drug dependence of the morphine type and, therefore, has the potential for being abused. Psychic dependence, physical dependence, and tolerance may develop upon repeated administration of this drug and it should be prescribed and administered with the same degree of caution appropriate to the use of other oral, narcotic-containing medications. Like other narcotic-containing medications, the drug is subject to the Federal Controlled Substances Act.

**Use in ambulatory patients:** Empirin with Codeine may impair the mental and/or physical abilities required for the performance of potentially hazardous tasks such as driving a car or operating machinery. The patient using this drug should be cautioned accordingly.

**Interaction with other central nervous system (CNS) depressants:** Patients receiving other narcotic analgesics, general anesthetics, phenothiazines, other tranquilizers, sedative-hypnotics, or other CNS depressants (including alcohol) concomitantly with Empirin with Codeine may exhibit an additive CNS depression. When such combined therapy is contemplated, the dose of one or both agents should be reduced.

**Use in pregnancy:** Safe use in pregnancy has not been established relative to possible adverse effects on fetal development. Therefore, Empirin with Codeine should not be used in pregnant women unless, in the judgment of the physician, the potential benefits outweigh the possible hazards.

**PRECAUTIONS:**

**Head injury and increased intracranial pressure:** The respiratory depressant effects of narcotics and their capacity to elevate cerebrospinal fluid pressure may be markedly exaggerated in the presence of head injury, other intracranial lesions or a pre-existing increase in intracranial pressure. Furthermore, narcotics produce adverse reactions which may obscure the clinical course of patients with head injuries.

**Acute abdominal conditions:** The administration of Empirin with Codeine or other narcotics may obscure the diagnosis or clinical course in patients with acute abdominal conditions.

**Allergic:** Precautions should be taken in administering salicylates to persons with known allergies; patients with nasal polyps are more likely to be hypersensitive to aspirin.

**Special risk patients:** Empirin with Codeine should be given with caution to certain patients such as the elderly or debilitated, and those with severe impairment of hepatic or renal function, hypothyroidism, Addison's disease, prostatic hypertrophy or urethral stricture, peptic ulcer, or coagulation disorders.

**ADVERSE REACTIONS:** The most frequently observed adverse reactions to codeine include light-headedness, dizziness, sedation, nausea and vomiting. These effects seem to be more prominent in ambulatory than in nonambulatory patients and some of these adverse reactions may be alleviated if the patient lies down. Other adverse reactions include euphoria, dysphoria, constipation, and pruritus.

The most frequently observed reactions to aspirin include headache, vertigo, ringing in the ears, mental confusion, drowsiness, sweating, thirst, nausea, and vomiting. Occasional patients experience gastric irritation and bleeding with aspirin. Some patients are unable to take salicylates without developing nausea and vomiting. Hypersensitivity may be manifested by a skin rash or even an anaphylactic reaction. With these exceptions, most of the side effects occur after repeated administration of large doses.

**DOSEAGE AND ADMINISTRATION:** Dosage should be adjusted according to the severity of the pain and the response of the patient. It may occasionally be necessary to exceed the usual dosage recommended below in cases of more severe pain or in those patients who have become tolerant to the analgesic effect of narcotics. Empirin with Codeine is given orally. The usual adult dose for Empirin with Codeine No. 2 and No. 3 is one or two tablets every four hours as required. The usual adult dose for Empirin with Codeine No. 4 is one tablet every four hours as required.

**DRUG INTERACTIONS:** The CNS depressant effects of Empirin with Codeine may be additive with that of other CNS depressants. See WARNINGS.



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# Vox Dox

Vox Dox Editor:

The following questionnaire was called to my attention and I thought it worth sharing:

Are you a part of the hospital nursing shortage? Find out if you might be by asking yourself these questions:

1. Do you know there is a body of nursing knowledge and actions separate and different from (while complementary to) medical knowledge?

2. Do you accept and encourage suggestions from nurses about patient care in a spirit of collaboration and honest inquiry? Or do you discourage and ridicule attempts to communicate and collaborate?

3. Do you write routine post-op nursing care orders instead of encouraging RNs to write their own (such as turn, cough, deep breathe, vital signs)?

4. Do you believe nurses are there to serve YOU, or to serve patients?

Examples of behavior offensive to nurses:

—Asking charge nurse to stop what s/he is doing and grab your charts and run behind you transcribing orders as if s/he is your private secretary.

—Expecting nurses to stand when you approach the nurses' station (yes, some MDs still expect this).

5. When you make an honest mistake or err in timing or judgment, do you talk with the patient or family about it, or do you blame the nursing staff, even though it's not their fault?

6. Do you criticize nurses in front of other people?

7. Do you put nurses in the position of lying for you ("Tell the patient's family I'm out of town")?

8. Are you known for your "tantrums" — and proud of it?

Lack of autonomy and lack of collaboration are part of the reason nurses are "voting with their feet" and leaving hospitals faster than hospitals can hire. You can help change this. Good nurses and good doctors must work together to change the offensive behavior of the few — or there won't be anyone left to care for patients in hospitals.

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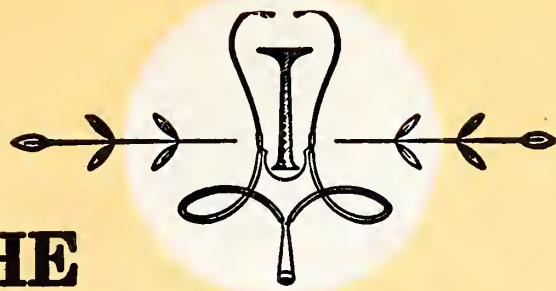
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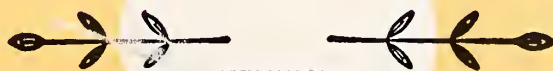
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# The JOURNAL of the KANSAS MEDICAL SOCIETY

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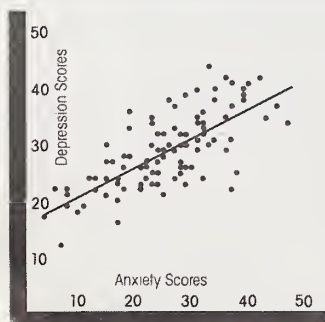
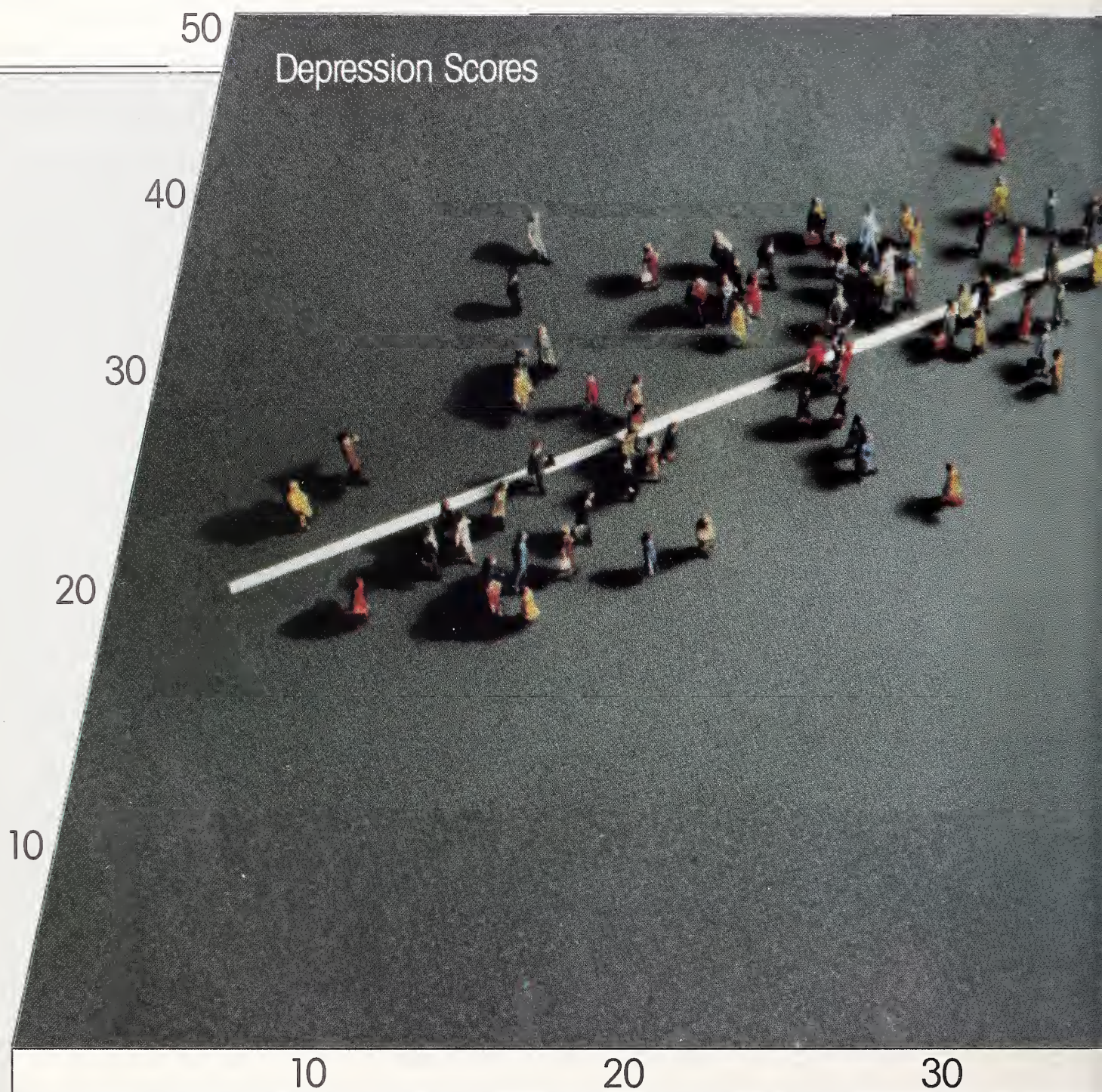
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## Clear correlation between anxiety and depression<sup>3</sup>

The above graph illustrates a relationship between anxiety and depression, indicating that patients seldom present with anxiety or depression alone; more often they have both in varying degrees. Data based on a sampling of 100 outpatients (64 male; 36 female) seen at a general psychiatric clinic.

<sup>3</sup>Adapted from Claghorn, J. The anxiety-depression syndrome. *Psychosomatics* 11:438-441, Sept-Oct 1970.



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**Usage in Pregnancy:** Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Since physical and psychological dependence to chlordiazepoxide have been reported rarely, use caution in administering Limbitrol to addiction-prone individuals or those who might increase dosage; withdrawal symptoms following discontinuation of either component alone have been reported (nausea, headache and malaise for amitriptyline; symptoms [including convulsions] similar to those of barbiturate withdrawal for chlordiazepoxide).

**Precautions:** Use with caution in patients with a history of seizures, in hyperthyroid patients or those on thyroid medication, and in patients with impaired renal or hepatic function. Because of the possibility of suicide in depressed patients, do not permit easy access to large quantities in these patients. Periodic liver function tests and blood counts are recommended during prolonged treatment. Amitriptyline component may block action of guanethidine or similar antihypertensives. Concomitant use with other psychotropic drugs has not been evaluated; sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Limbitrol should not be taken during the nursing period. Not recommended in children under 12.

In the elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects.

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**Neurologic:** Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns.

**Anticholinergic:** Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract.

**Allergic:** Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus.

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**Gastrointestinal:** Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue.

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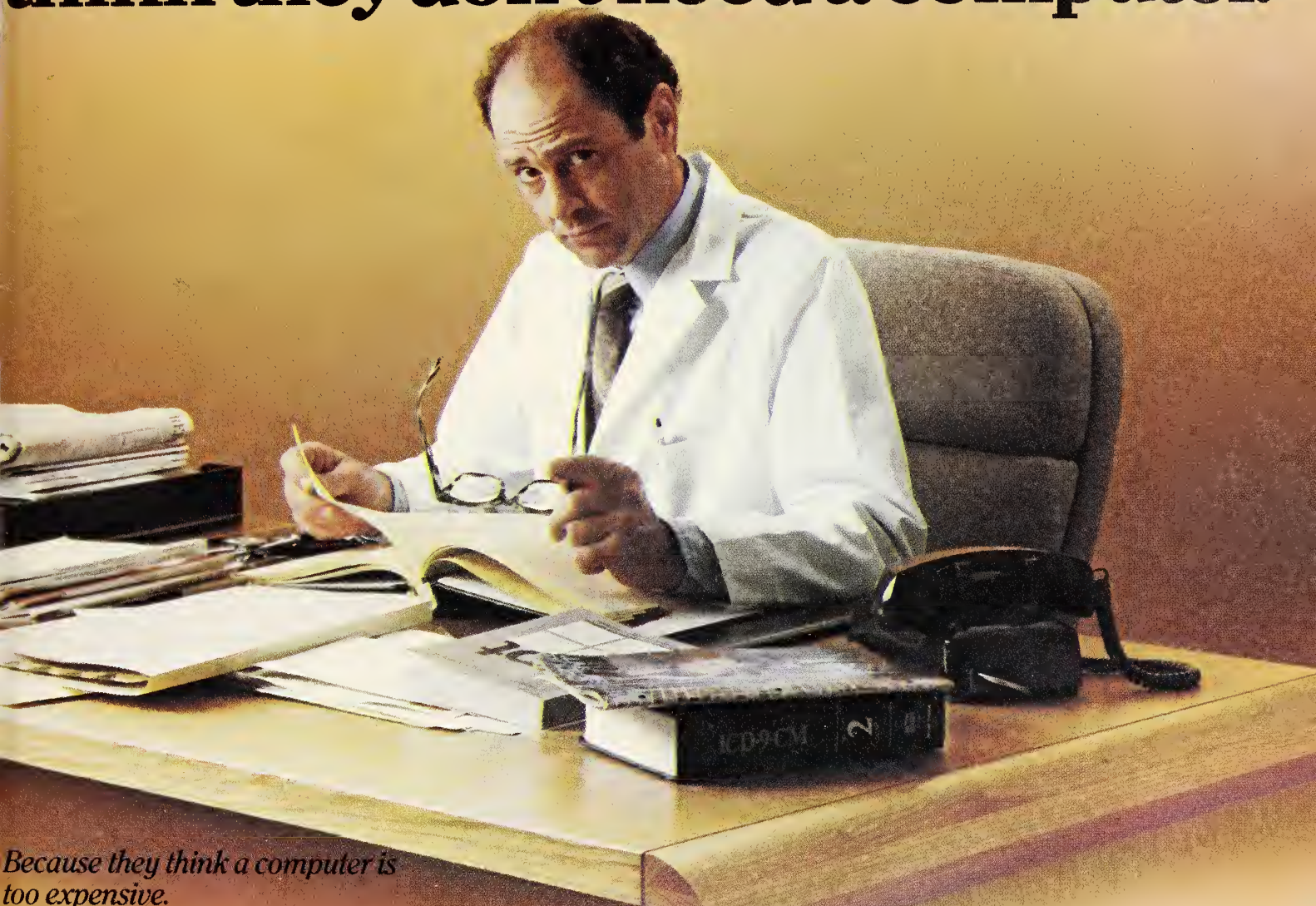
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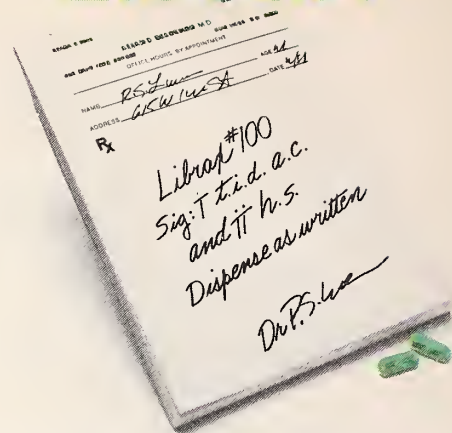
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As with all anticholinergics, inhibition of lactation may occur.

**Precautions:** In elderly and debilitated, limit dosage to smallest effective amount to preclude ataxia, oversedation, confusion (no more than 2 capsules/day initially; increase gradually as needed and tolerated). Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider pharmacology of agents, particularly potentiating drugs such as MAO inhibitors, phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions reported in psychiatric patients. Employ usual precautions in treating anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship not established.

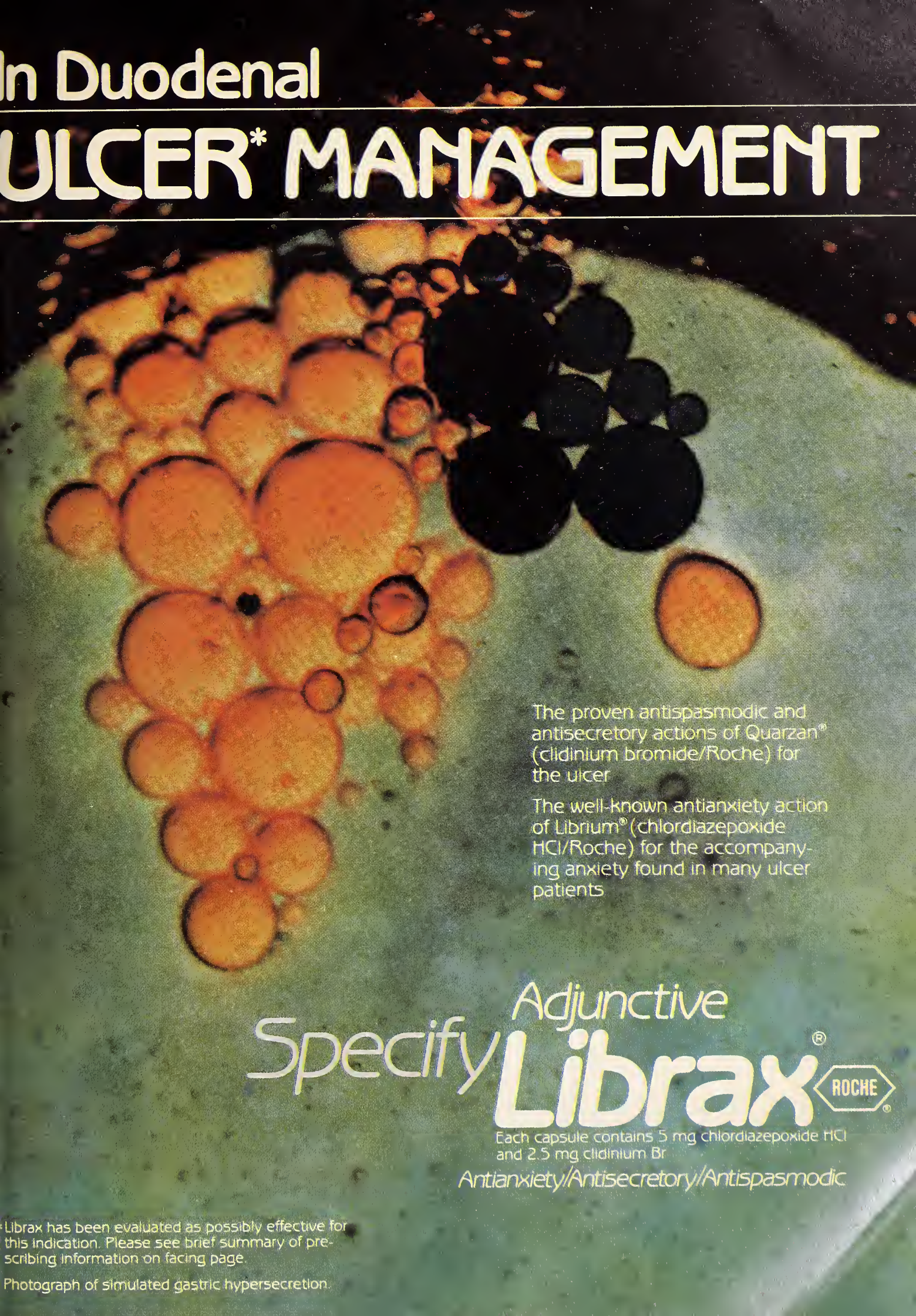
**Adverse Reactions:** No side effects or manifestations not seen with either compound alone reported with Librax. When chlordiazepoxide HCl is used alone, drowsiness, ataxia, confusion may occur, especially in elderly and debilitated; avoidable in most cases by proper dosage adjustment, but also occasionally observed at lower dosage ranges. Syncope reported in a few instances. Also encountered: isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent, generally controlled with dosage reduction; changes in EEG patterns may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice, hepatic dysfunction reported occasionally with chlordiazepoxide HCl, making periodic blood counts and liver function tests advisable during protracted therapy. Adverse effects reported with Librax typical of anticholinergic agents, i.e., dryness of mouth, blurring of vision, urinary hesitancy, constipation. Constipation has occurred most often when Librax therapy is combined with other spasmolytics and/or low residue diets.



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The proven antispasmodic and antisecretory actions of Quarzan® (clidinium bromide/Roche) for the ulcer

The well-known antianxiety action of Librium® (chlordiazepoxide HCl/Roche) for the accompanying anxiety found in many ulcer patients

Specify *Adjunctive* **Librax**® 

Each capsule contains 5 mg chlordiazepoxide HCl and 2.5 mg clidinium Br

*Antianxiety/Antisecretory/Antispasmodic*

Librax has been evaluated as possibly effective for this indication. Please see brief summary of prescribing information on facing page.

Photograph of simulated gastric hypersecretion.



Although weight loss achieved in a weight control program varies from patient to patient, this simulated sequence of a professional model illustrates dramatically the benefits of a successful weight loss program.



getting there...



...takes dietary restriction, regular exercise, behavior modification, and sometimes the addition of an effective anorectic.

prescribe

# Tenuate® Dospan® <sup>IV</sup> (diethylpropion hydrochloride NF)

75 mg. controlled-release tablets

the #1 prescribed anorectic

## An effective short-term adjunct in an indicated weight loss program

Overweight patients in certain diagnostic categories often require strict obesity control. Diethylpropion hydrochloride has been reported useful in obese patients with certain complications. While it is not suggested that Tenuate in any way reduces these complications in the overweight, it may have a useful place as a short-term adjunct in a prescribed dietary regimen. Tenuate should not be administered to patients with severe hypertension; see additional Warnings and Precautions on this page.

## In uncomplicated obesity

Many patients, on the other hand, present with excess fat but no disease. While this condition is often termed uncomplicated obesity, complications of both a social and a psychologic nature may be distressingly real for the patients. In these cases, a short-term regimen of Tenuate can help reinforce your dietary counsel during the important early weeks of an indicated weight loss program.

## Clinical effectiveness

The anorectic effectiveness of diethylpropion hydrochloride is well documented. No less than 18 separate double-blind, placebo-controlled studies attest to its usefulness in daily practice.<sup>1</sup> And the unique chemistry of Tenuate provides "...anorectic potency with minimal overt central nervous system or cardiovascular stimulation."<sup>2</sup> Compared with the amphetamines, diethylpropion has minimal potential for abuse.

**Tenuate—it makes sense.  
And it's responsible medicine.**

# Merrell

Tenuate® <sup>IV</sup>  
(diethylpropion hydrochloride NF)

Tenuate Dospan® <sup>IV</sup>  
(diethylpropion hydrochloride NF)  
controlled-release

AVAILABLE ONLY ON PRESCRIPTION

### Brief Summary

**INDICATION:** Tenuate and Tenuate Dospan are indicated in the management of exogenous obesity as a short-term adjunct (a few weeks) in a regimen of weight reduction based on caloric restriction. The limited usefulness of agents of this class should be measured against possible risk factors inherent in their use such as those described below.

**CONTRAINDICATIONS:** Advanced arteriosclerosis, hyperthyroidism, known hypersensitivity, or idiosyncrasy to the sympathomimetic amines, glaucoma. Agitated states. Patients with a history of drug abuse. During or within 14 days following the administration of monoamine oxidase inhibitors, (hypertensive crises may result).

**WARNINGS:** If tolerance develops, the recommended dose should not be exceeded in an attempt to increase the effect; rather, the drug should be discontinued. Tenuate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle; the patient should therefore be cautioned accordingly. *Drug Dependence:* Tenuate has some chemical and pharmacologic similarities to the amphetamines and other related stimulant drugs that have been extensively abused. There have been reports of subjects becoming psychologically dependent on diethylpropion. The possibility of abuse should be kept in mind when evaluating the desirability of including a drug as part of a weight reduction program. Abuse of amphetamines and related drugs may be associated with varying degrees of psychologic dependence and social dysfunction which, in the case of certain drugs, may be severe. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG. Manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxications is psychosis, often clinically indistinguishable from schizophrenia. *Use in Pregnancy:* Although rat and human reproductive studies have not indicated adverse effects, the use of Tenuate by women who are pregnant or may become pregnant requires that the potential benefits be weighed against the potential risks. *Use in Children:* Tenuate is not recommended for use in children under 12 years of age.

**PRECAUTIONS:** Caution is to be exercised in prescribing Tenuate for patients with hypertension or with symptomatic cardiovascular disease, including arrhythmias. Tenuate should not be administered to patients with severe hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of Tenuate and the concomitant dietary regimen. Tenuate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdosage. Reports suggest that Tenuate may increase convulsions in some epileptics. Therefore, epileptics receiving Tenuate should be carefully monitored. Titration of dose or discontinuance of Tenuate may be necessary.

**ADVERSE REACTIONS:** *Cardiovascular:* Palpitation, tachycardia, elevation of blood pressure, precordial pain, arrhythmia. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride. *Central Nervous System:* Overstimulation, nervousness, restlessness, dizziness, jitteriness, insomnia, anxiety, euphoria, depression, dysphoria, tremor, dyskinesia, mydriasis, drowsiness, malaise, headache; rarely psychotic episodes at recommended doses. In a few epileptics an increase in convulsive episodes has been reported. *Gastrointestinal:* Dryness of the mouth, unpleasant taste, nausea, vomiting, abdominal discomfort, diarrhea, constipation, other gastrointestinal disturbances. *Allergic:* Urticaria, rash, ecchymosis, erythema. *Endocrine:* Impotence, changes in libido, gynecomastia, menstrual upset. *Hematopoietic System:* Bone marrow depression, agranulocytosis, leukopenia. *Miscellaneous:* A variety of miscellaneous adverse reactions has been reported by physicians. These include complaints such as dyspnea, hair loss, muscle pain, dysuria, increased sweating, and polyuria.

**DOSE AND ADMINISTRATION:** Tenuate (diethylpropion hydrochloride): One 25 mg. tablet three times daily, one hour before meals, and in mid-evening if desired to overcome night hunger. Tenuate Dospan (diethylpropion hydrochloride) controlled-release: One 75 mg. tablet daily, swallowed whole, in mid-morning. Tenuate is not recommended for use in children under 12 years of age.

**OVERDOSAGE:** Manifestations of acute overdosage include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states. Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Overdose of pharmacologically similar compounds has resulted in fatal poisoning, usually terminating in convulsions and coma. Management of acute Tenuate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Intravenous phentolamine (Regitine®) has been suggested on pharmacologic grounds for possible acute, severe hypertension, if this complicates Tenuate overdosage.

Product Information as of January, 1980

MERRELL-NATIONAL LABORATORIES INC.  
Cayey, Puerto Rico 00633

Direct Medical Inquiries to:  
MERRELL DOW PHARMACEUTICALS INC.  
Subsidiary of The Dow Chemical Company  
Cincinnati, Ohio 45215  
Licensor of Merrell®

**References:** 1. Citations available on request from Merrell Dow Pharmaceuticals Inc., Cincinnati, Ohio 45215. 2. Hoekenga, M.T. et al: A comprehensive review of diethylpropion hydrochloride. In *Central Mechanisms of Anorectic Drugs*, S. Garattini and R. Samanin, Ed., New York, Raven Press, 1978, pp. 391-404.



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HLA Testing for disease association studies, HLA B-27, HLA-B8, Paternity Testing, etc.

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### Brief Summary of Prescribing Information.

**Indications and Usage:** Management of anxiety disorders or short-term relief of symptoms of anxiety or anxiety associated with depressive symptoms. Anxiety or tension associated with stress of everyday life usually does not require treatment with an anxiolytic.

Effectiveness in long-term use, i.e., more than 4 months, has not been assessed by systematic clinical studies. Reassess periodically usefulness of the drug for the individual patient.

**Contraindications:** Known sensitivity to benzodiazepines or acute narrow-angle glaucoma.

**Warnings:** Not recommended in primary depressive disorders or psychoses. As with all CNS-acting drugs, warn patients not to operate machinery or motor vehicles, and of diminished tolerance for alcohol and other CNS depressants.

**Physical and Psychological Dependence:** Withdrawal symptoms like those noted with barbiturates and alcohol have occurred following abrupt discontinuance of benzodiazepines (including convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Addictive-prone individuals, e.g. drug addicts and alcoholics, should be under careful surveillance when on benzodiazepines because of their predisposition to habituation and dependence. Withdrawal symptoms have also been reported following abrupt discontinuance of benzodiazepines taken continuously at therapeutic levels for several months.

**Precautions:** In depression accompanying anxiety, consider possibility for suicide.

For elderly or debilitated patients, initial daily dosage should not exceed 2mg to avoid over sedation. Terminate dosage gradually since abrupt withdrawal of any anti-anxiety agent may result in symptoms like those being treated: anxiety, agitation, irritability, tension, insomnia and occasional convulsions. Observe usual precautions with impaired renal or hepatic function. Where gastrointestinal or cardiovascular disorders coexist with anxiety, note that lorazepam has not been shown of significant benefit in treating gastrointestinal or cardiovascular component. Esophageal dilation occurred in rats treated with lorazepam for more than 1 year 6mg/kg/day. No effect dose was 1.25mg/kg/day (about 6 times maximum human therapeutic dose of 10mg/day). Effect was reversible only when treatment was withdrawn within 2 months of first observation. Clinical significance is unknown; but use of lorazepam for prolonged periods and in geriatrics requires caution and frequent monitoring for symptoms of upper GI disease. Safety and effectiveness in children under 12 years have not been established.

**ESSENTIAL LABORATORY TESTS:** Some patients have developed leukopenia; some have had elevations of LDH. As with other benzodiazepines, periodic blood counts and liver function tests are recommended during long-term therapy.

**CLINICALLY SIGNIFICANT DRUG INTERACTIONS:** Benzodiazepines produce CNS depressant effects when administered with such medications as barbiturates or alcohol.

**CARCINOGENESIS AND MUTAGENESIS:** No evidence of carcinogenic potential emerged in rats during an 18-month study. No studies regarding mutagenesis have been performed.

**PREGNANCY:** Reproductive studies were performed in mice, rats, and 2 strains of rabbits. Occasional anomalies (reduction of tarsals, tibia, metatarsals, malrotated limbs, gastroschisis, malformed skull and microphthalmia) were seen in drug-treated rabbits without relationship to dosage. Although all these anomalies were not present in the concurrent control group, they have been reported to occur randomly in historical controls. At 40mg/kg and higher, there was evidence of fetal resorption and increased fetal loss in rabbits which was not seen at low doses. Clinical significance of these findings is not known. However, increased risk of congenital malformations associated with use of minor tranquilizers (chloridiazepoxide, diazepam, meprobamate) during first trimester of pregnancy has been suggested in several studies. Because use of these drugs is rarely a matter of urgency, use of lorazepam during this period should almost always be avoided. Possibility that a woman of child-bearing potential may become pregnant at institution of therapy should be considered. Advise patients if they become pregnant to communicate with their physician about desirability of discontinuing the drug. In humans, blood levels from umbilical cord blood indicate placental transfer of lorazepam and glucuronide.

**NURSING MOTHERS:** It is not known if oral lorazepam is excreted in human milk like other benzodiazepines. As a general rule, nursing should not be undertaken while on a drug since many drugs are excreted in milk.

**Adverse Reactions,** if they occur, are usually observed at beginning of therapy and generally disappear on continued medication or on decreasing dose. In a sample of about 3,500 anxious patients, most frequent adverse reaction is sedation (15.9%), followed by dizziness (6.9%), weakness (4.2%) and unsteadiness (3.4%). Less frequent are disorientation, depression, nausea, change in appetite, headache, sleep disturbance, agitation, dermatological symptoms, eye function disturbance, various gastrointestinal symptoms and autonomic manifestations. Incidence of sedation and unsteadiness increased with age. Small decreases in blood pressure have been noted but are not clinically significant, probably being related to relief of anxiety.

**Overdosage:** In management of overdosage with any drug, bear in mind multiple agents may have been taken. Manifestations of overdosage include somnolence, confusion and coma. Induce vomiting and/or undertake gastric lavage followed by general supportive care, monitoring vital signs and close observation. Hypotension, though unlikely, usually may be controlled with Levarterenol Bitartrate Injection U.S.P. Usefulness of dialysis has not been determined.

**Ativan<sup>®</sup>**  
**for (lorazepam)**  
**Anxiety**

**Dosage:** Individualize for maximum beneficial effects. Increase dosage gradually when needed, giving higher evening dose before increasing daytime doses. Anxiety, usually 2-3mg/day given b.i.d. or t.i.d.; dosage may vary from 1 to 10mg/day in divided doses. For elderly or debilitated, initially 1-2mg/day; insomnia due to anxiety or transient situational stress, 2-4mg h.s.

**How Supplied:** 0.5, 1.0 and 2.0mg tablets.



# Four practical reasons to prescribe **Ativan<sup>®</sup>** **for** (lorazepam) **Anxiety<sup>\*</sup>**



# 1

## No interaction with more than 300 drugs<sup>†</sup>

In clinical studies, Ativan was given concomitantly with hundreds of medications, including gastrointestinal and cardiovascular, with no reported interactions. Whereas the interaction of diazepam and cimetidine has been shown to cause increased sedation in patients taking both drugs, the clearance of Ativan is not delayed by Tagamet.<sup>‡</sup>



# 2

## Lets most patients stay active

Long-acting benzodiazepines have long-acting metabolites with activity which can produce excessive accumulation that may lead to unwanted sedation. Ativan<sup>®</sup> has no active metabolites, reaches steady state in 2 to 3 days and usually does not cause oversedation. Also, the shorter half-life of Ativan is consistent with b.i.d. dosage, so drug hangover is seldom a problem the next morning.



# 3

## Not appreciably affected by aging

Unlike the long-acting benzodiazepines—diazepam <sup>®</sup>, chlordiazepoxide <sup>®</sup>, clorazepate <sup>®</sup> and prazepam <sup>®</sup> — the metabolism and clearance of Ativan are not appreciably affected by the aging process.



# 4

## Not significantly affected by liver dysfunction

Ativan<sup>®</sup> is metabolized in one simple step to an inactive glucuronide; its absorption and excretion are not significantly altered by cirrhosis or hepatitis. By contrast, the metabolism of diazepam and chlordiazepoxide has been reported to be significantly altered in patients with liver dysfunction.

<sup>\*</sup>Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic.  
<sup>†</sup>All benzodiazepines, however, produce additive effects when given with CNS depressants, such as barbiturates or alcohol.

<sup>‡</sup>Tagamet (cimetidine) is a registered trademark of Smith Kline & French Laboratories, Division of SmithKline Corporation.

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See important information on following page.

**Wyeth Laboratories**  
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American Medical Association Auxiliary  
535 No. Dearborn St., Chicago, IL 60610

## A U X I L I A R Y N E W S

### *An Open Letter to Kansas Physicians*

The 1981 convention in Salina is history, and the changing of the guard is now a reality. Thanks to Evelyn Huff, most recent past president, our auxiliary has had a successful year under her efficient and capable leadership. Our second annual AMAERF Auction netted more than \$7,500 with the sums being almost evenly divided between the AMAERF funds and the Ronald McDonald houses in Kansas City and Wichita. Thank you for your generous support of this fun and beneficial program.

In our efforts to "Shape Up For Life," we became involved with a couple of golf games and wholeheartedly partook of the "Strictly Fun Run" for two miles, winding up with a delicious "runner's breakfast" at the home of Dr. and Mrs. Dick Brummett. Thank you, Saline County, for making it a fun and an interesting convention!

We enjoyed the presence of our national visitor, Mrs. John Bates, first vice president of the AMAA from Cuthbert, Georgia, at most of our convention functions. In her message to us, she stressed that *unity* in the auxiliary is most important and the fact that membership is the lifeblood of our organization.

Managing stress will be the focus of the AMA Auxiliary Shape Up For Life Campaign when it enters its third year in June. "Stress is the disease of the 80s," says Robert S. Eliot, M.D., Director of the Cardiovascular Center at the University of Nebraska, and well known authority on the effects of stress on the human body. He will tell us what we can do about 20th century stress at a luncheon during the Convention at noon on Tuesday, June 9. Our Shape Up For Life poster will be reprinted to read "Make it a habit, eat right, exercise regularly, avoid stress."

Because of our deep concern for quality of life for all, a committee consisting of Mrs. Lucien Pyle, Mrs. Clell Flowers, and Mrs. Ernest Neighbor was appointed to investigate what can be done about violence on television.

Everyone at the convention was very proud to have one of our past presidents, Mrs. Bill Crouch (Henrietta Jean) named NATIONAL MOTHER OF THE YEAR! Congratulations are in order for the entire Crouch family as it was and is a family affair!

*Betty L. Moore,*

President

Kansas Medical Society Auxiliary

# "See this? Southwestern Bell helped us improve service to patients. And made me look good."

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### *Transfer of Power*

Phillip A. Godwin, M.D., Lawrence outgoing president, presents the gavel of office to Herman W. Hiesterman, M.D., Quinter, who will carry the responsibilities of the presidency of the Kansas Medical Society during the coming year.

## Council Meeting

### *Report of Meeting Held May 10, 1981*

A meeting of the Council was held on Sunday, May 10, 1981, at the Hilton Inn, Salina, immediately upon the adjournment of the second session of the House of Delegates. Herman W. Hiesterman, M.D., President, presided.

Present were Drs. Philip J. Antrim, Anthony; Donald E. Beahm, Great Bend; F. Calvin Bigler, Garden City; James G. Bridgens, Shawnee Mission; Clair C. Conard, Dodge City; Jack R. Cooper, Shawnee Mission; Rex R. Fischer, Manhattan; Phillip A. Godwin, Lawrence; Donald D. Goering, Coldwater; Robert W. Hughes, Lawrence; John Neuenschwander, Hoxie; Lew W. Purinton, Wichita; Alex Scott, Junction City; Newton C. Smith, Arkansas City; Marvin D. Snowbarger, Emporia; Max E. Teare, Garden City; William K. Walker, Sedan; Linda D. Warren, Hanover; Roger D. Warren, Hanover; Wallace N. Weber, Hays; and Kermit G. Wedel, Minneapolis.

Also present were Jerry Slaughter, Gary Caruthers, and Val Braun.

The Council approved a letter of recommendation to the Governor that Helen Gilles, M.D., Lawrence, and Paul L. Rodriguez, M.D., Garden City, be reappointed to the Kansas State Board of Healing Arts.

The Council also approved a letter of recommendation to Kansas Blue Cross that Ladonna M. Regier, M.D., Colby; Earl D. Merkel, M.D., Russell; and Tom E. Kendall, M.D., Wichita, be reelected to the Blue Cross Board of Directors.

The Council reappointed Drs. Donald R. Pierce and David E. Gray to the *Journal* Editorial Board. Dr. Gray was enthusiastically reappointed Editor of the *Journal*. Howard N. Ward, M.D., Topeka, was added to the Editorial Board as a new member.

A brief discussion followed on the possibility of holding a future annual meeting out of state, perhaps at the Broadmoor Hotel in Colorado Springs, or at Shangri-La in Oklahoma. On a show of hands, the Council indicated support for exploring the possi-

*(Continued on page 281)*

# Official Proceedings

## *1981 Annual Meeting of the House of Delegates*

Transactions of the 122nd annual session of the Kansas Medical society are published in this issue of *The Journal*.

The resolutions are printed in numerical order under the Minutes of the Second House of Delegates session. Those resolutions that were not adopted but were referred for further study or information are so indicated. The resolutions that failed to pass are retained in the official minutes at the Executive Office, but are not recorded here.

### FIRST SESSION

The first session of the House of Delegates of the Kansas Medical Society met on Friday, May 8, 1981, beginning at 9:00 AM, at the Hilton Inn, Salina. The meeting was called to order by Clair C. Conard, M.D., Speaker, who introduced Clarence Waters, M.D. President of the Saline County Medical Society.

Dr. Waters welcomed the delegates to Salina on behalf of the Saline County Medical Society, and extended an invitation to all delegates to attend the activities throughout the meeting. He introduced Merle A. Hodges, M.D., Mayor of Salina.

Mayor Hodges welcomed the delegates to Salina and stated that he is proud of the local medical society and the City of Salina. The city is well situated in a central location and has many fine facilities for meetings. Dr. Hodges urged the delegates to become more interested and energetic in politics at the local, state and national levels, and to seek political office.

The Speaker then briefly reviewed the order of business and explained that the House was composed of elected officers, past presidents, Councilors, representatives of specialty societies, and the duly elected delegates from the component medical societies. He stated that the House would follow the *Sturgis Standard Code of Parliamentary Procedure*.

Dr. Conard announced that the Reference Committee will meet after the deliberations by the House to study the resolutions. He invited all those present to appear before this committee to help draft acceptable versions of the business presented. All members of the Society are encouraged to provide input, whether delegates or not. The composition of the Reference Committee would be as follows: Franklin G. Bichlmeier, M.D., Kansas City, Chairman; Drs.

Donald E. Beahm, Great Bend, Rex R. Fischer, Manhattan, and Robert J. Haskins, Chanute.

Dr. Conard, Speaker, who also serves as AMA Delegate, then introduced the officers of the Society as follows: Phillip A. Godwin, M.D., Lawrence, President; Herman W. Hiesterman, M.D., Quinter, President Elect; Kermit G. Wedel, M.D., Minneapolis, First Vice President and AMA Alternate; Jimmie A. Gleason, M.D., Second Vice President; William K. Walker, M.D., Sedan, Treasurer; Jack R. Cooper, M.D., Shawnee Mission, Constitutional Secretary; Alex Scott, M.D., Junction City, AMA Delegate; and Lew W. Purinton, M.D., Wichita, AMA Alternate.

The presence of a quorum was announced.

Upon a motion by Dr. Cooper, the minutes of the 1980 annual meeting were approved by acclamation.

The following tellers were appointed: David A. Leitch, M.D., Garnett, Chairman; Drs. Donald D. Goering, Coldwater, and Linda D. Warren, Hanover.

The Treasurer's Report was given by Dr. Walker. Printed copies of the report were distributed to every member of the House. Dr. Walker stated that KMS dues will remain at \$150 for 1982. He directed the delegates' attention to the report entitled "Kansas Medical Society Comparative Analysis," comparing Kansas dues levels with those of other states, and noted that Kansas ranks 46th in the amount of state dues in the AMA Federation (please see the complete report below).

Dr. Cooper distributed the report of the Constitutional Secretary. He explained that the total number for 1980 showed a decrease from the previous year. This difference was the result of computerization of membership records, elimination of duplication, and more current records through the timely elimination of non-paying members. The number for 1981, which includes membership for the period through April, already surpassed the 1980 total (see below).

The House stood and observed a moment of silence at the conclusion of the Necrology Report, given by Dr. Gray.

In concluding the Editor's Report, Dr. Gray presented Dr. Godwin with a bound volume of *The Journal* for the President's term 1980/81. Dr. Godwin in turn presented the Editor with a bound volume of *The Journal* for 1980.





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## **NEOSPORIN® Ointment** (polymyxin B-bacitracin-neomycin)

Each gram contains: Aerosporin® (Polymyxin B Sulfate) 5,000 units, bacitracin zinc 400 units, neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base); special white petrolatum qs; in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) foil packets.

**works just as well in their homes.**

- It's effective therapy for abrasions, lacerations, open wounds, primary pyodermas, secondarily infected dermatoses.
- It provides broad-spectrum overlapping antibacterial effectiveness against common susceptible pathogens, including staph and strep.



- It helps prevent topical infections, and treats those that have already started.
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- It is convenient to recommend without a prescription.

**NEOSPORIN® Ointment—for the office, for the home.**  
(polymyxin B-bacitracin-neomycin)

**Effective • Economical • Convenient • Recommendable**

Each gram contains: Aerosporin® (Polymyxin B Sulfate) 5,000 units, bacitracin zinc 400 units, neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base); special white petrolatum qs; in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) foil packets.

**WARNING:** Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as a failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

**PRECAUTIONS:** As with other antibacterial preparations, prolonged use may result in overgrowth of non-susceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

**ADVERSE REACTIONS:** Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.



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Ballots for primary election were distributed.

Rex R. Fischer, M.D., Manhattan, had been nominated for office of second Vice President. He reported that he was also re-nominated for the position of President of Kansas Blue Shield. In view of this development, he asked that his name be removed from consideration at this time. This was done.

There were no additional nominations from the floor. The delegates voted for the following slate:

PRESIDENT ELECT: Kermit G. Wedel, M.D., Minneapolis

FIRST VICE PRESIDENT: Jimmie A. Gleason, M.D., Topeka

SECOND VICE PRESIDENT: F. Calvin Bigler, M.D., Garden City; Louis M. Culp, M.D., Kansas City

CONSTITUTIONAL SECRETARY: Jack R. Cooper, M.D., Shawnee Mission

TREASURER: William K. Walker, M.D. Sedan

AMA DELEGATE: K. William Bruner, Jr., M.D., Wichita; Clair C. Conard, M.D., Dodge City

AMA ALTERNATE DELEGATE: Lew W. Purinton, M.D., Wichita; Thomas F. Taylor, M.D., Salina; Emerson D. Yoder, M.D., Denton

SPEAKER: Clair C. Conard, M.D., Dodge City

VICE SPEAKER: G. Rex Stone, M.D., Manhattan

Dr. Conard invited Dr. John Yulich to address the House. Dr. Yulich thanked the House for the opportunity of having served as Vice Speaker for the past four years. He stated that after July 1, he will no longer be a delegate to this House, and that he would be moving his medical practice from Kansas City to Sabetha. The House expressed its appreciation to Dr. Yulich for his past services with a boisterous round of applause.

The House heard a report from the American Medical Association Board of Trustees, delivered by Alan R. Nelson, M.D., Salt Lake City (please see below).

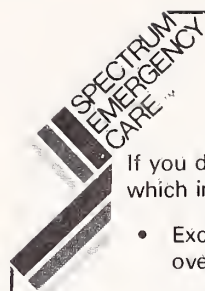
Dr. Gleason reviewed the activities of the Legislative Committee during the past legislative session, indicating that it was one of the poorest he has seen since serving as committee chairman. Two big issues — the severance tax and school finance — took most of the time, so that very little else was accomplished. Some bills that were passed included a child passenger restraint in automobiles law, which is basically an educational program encouraging parents to restrain children while traveling in automobiles; a bill was passed eliminating premarital serologies; there were some cuts in Medicaid reimbursement; the medical student loan program

was reduced from 200 eligible loans per class to 100. Senate Concurrent Resolution 1607, Advanced Registered Nurse Practitioner Regulations, was not passed, which allowed the permanent regulations to take effect May 1. These regulations are written ambiguously in certain areas, and this issue will be discussed in the Reference Committee later. Dr. Gleason thanked the Legislative Committee and Jerry Slaughter for the excellent work they had done during the past year.

Dr. Roger Warren, Chairman, presented the KaMPAC Board of Directors report in which he briefly reviewed the history of physician involvement in politics and encouraged continued physician involvement in the political process. He encouraged physicians to maintain close contact with representatives and to become a counselor and aide. KaMPAC contributed \$25,800 to 93 candidates in last year's elections. Ninety-three per cent of those candidates were elected. There was more involvement in state elections, and KaMPAC has become more selective about contributing to federal candidates. Dr. Warren invited everyone to the KaMPAC hospitality suite that evening. He also invited interested physicians to volunteer for service on the KaMPAC Board where vacancies exist.

The President, Phillip A. Godwin, M.D., in his report, thanked the House for the opportunity to have served the physicians of Kansas the past year as President. He briefly reviewed some shortcomings that he noted this past year, particularly in relationships with nurses and the nursing shortage. It was his feeling that the Committee was prevented from addressing the nursing shortage problem because of a preoccupation with defining the role of nurses, such as that of the Advanced Registered Nurse Practitioner. He sees a need for liaison with the Physician's Assistants, as there is concern about the inappropriate use of Physician's Assistants across the state. Recruitment of medical students and residents is the topic of one resolution before the House, and needs to be pursued. The area of cost containment, and the Voluntary Effort project have not been as visible as he would have liked. Dr. Godwin welcomed the involvement of women in the Kansas Medical Society. He is particularly pleased that Linda D. Warren, M.D., Hanover, was appointed to the AMA Ad Hoc Committee on Women in Organized Medicine, one of only five women across the United States to make up the committee. The Long Term Care Committee has done considerable work this year in meeting with the nursing home administrators and the patient care





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advocates. In the legislative process, in spite of significant financial cuts, we were able to secure an increase in fees for office calls and obstetrics in the Medicaid program. For the future, Dr. Godwin sees the role of physician supervision of nurses to continue as an important issue. Government will not go away. There will be a shift from the federal to the state level, which will require stronger lobbying at the state level. There will continue to be health planning, peer review and utilization review, the major question being, who will accomplish such review. Competition will be promoted by many, and physicians must be ready to have structured input. Dr. Godwin thanked the House for the opportunity to address them and invited everyone to attend the President's banquet.

The Auxiliary President, Mrs. Evelyn (John D.) Huff, briefly addressed the House. She reported that the Auxiliary theme, "Shape Up For Life," is in its second year. It promotes nutrition and good health habits. Health education in schools was stressed this year, including the use of the body pollution centers. In Wyandotte County, this program has been translated into Spanish and used in schools for migrant

workers, traveling across the country with the migrant workers. Another program that has slowly gotten off the ground is the SCORE program — Student Councils Offer Responsible Education. These are educational programs done by the students in junior and senior high schools which deal with birth defects, venereal disease, nutrition, and other programs. This year's participation in the AMA Education Research Foundation activities provided \$23,130 for the Medical Schools of Kansas. In addition, each county auxiliary carries on many programs, including international health programs which put together clothing, glasses, and other supplies and distribute them internationally. Loans totaling \$1,272 were granted from the memorial loan fund. Three physician spouses are serving in the Kansas Legislature this year, and the Medical Auxiliary was pleased to be asked to participate in many of the KMS committees. A communications workshop was held this spring in which Auxiliary members learned to interview physicians for a radio public affairs presentation. Mrs. Huff announced the Auxiliary Auction on Friday evening to raise funds for the AMAERF and Ronald McDonald project. Mrs. Huff thanked the House for the opportunity to address them and for the strong support that the Kansas Medical Society had shown in auxiliary programs.

The Speaker announced the results of the primary election as follows:

SECOND VICE PRESIDENT: F. Calvin Bigler, M.D., Garden City; Louis M. Culp, M.D., Kansas City

AMA ALTERNATE DELEGATE: Lew W. Purinton, M.D., Wichita; Emerson D. Yoder, M.D., Denton

The Speaker announced that Councilors for the following districts need to be elected:

- # 1 — Roger Warren. Not eligible for re-election
- # 3 — James Bridgens. Eligible
- # 5 — Kenneth Boese. Eligible
- # 8 — Stephen Smith. Eligible
- # 9 — Herbert Doubek. Eligible
- #17 — Max Teare. Eligible

Rules were suspended and the following resolutions were approved by acclamation on consent calendar:

- 81-6 Standard Immunization Record Form
- 81-27 Cost Containment Awareness in Hospitals
- 81-28 Cost Awareness Training at UKSM
- 81-32 Commendation to Wesley H. Sowers
- 81-34 Commendation to Mrs. Jean (William H.) Crouch
- 81-36 Commendation to UKSM-Kansas City

81-37 Commendation to Dr. William C. Swisher  
The First Session of the House of Delegates adjourned at 11:50 AM.

### The Kansas Medical Society — A Comparative Analysis

More than 250,000 physicians are members of the 52 state associations (Washington, D. C. and Puerto Rico account for the discrepancy in "states"). The largest is California with 24,000 members; smallest is Alaska with 300 members. Seven states have more than 10,000 members; nine have fewer than 1,000. Membership in the KMS is currently almost 2,750.

According to the 1981 schedule, Kansas joins with 33 other states in planning the annual meeting during the spring (March-May). Thirteen states will meet in the autumn (September-November). Three will meet during the summer (June-August); New Hampshire met in January; and Puerto Rico did not schedule a meeting. Seventeen states plan to hold some form of interim meeting this year.

The highest annual dues assessment for 1981 is \$495; lowest is \$115. Kansas, at \$150, is well below the median of \$220. In our geographic region, dues for the seven states range from \$115-300. Nineteen states, including Kansas, have membership totals ranging from 2,000 to 4,999 and assess annual dues ranging from \$115 to \$495.

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The ratio for state society executive office staff vs members is 225. Kansas stands at 1:373.

<i>Rank</i>	<i>Amount</i>
*1. District of Columbia	\$495.00
2. Wisconsin	380.00
3. Alaska	350.00
4. Idaho	345.00
5. Colorado	310.00
6. Arizona	300.00
7. Maine	300.00
8. Montana	300.00
9. South Dakota	300.00
10. Wyoming	300.00
11. Hawaii	297.00
12. Minnesota	290.00
13. Iowa	275.00
14. Pennsylvania	275.00
15. Washington	273.00
16. Michigan	260.00
17. California	250.00
18. New Jersey	250.00
19. West Virginia	250.00
20. Utah	245.00
21. Maryland	230.00
22. Georgia	225.00
23. Kentucky	225.00
24. Arkansas	225.00
25. New Hampshire	225.00
26. Nebraska	220.00
27. South Carolina	220.00
28. Oregon	212.00
29. Mississippi	210.00
30. Delaware	205.00
31. Illinois	203.00
32. Louisiana	200.00
33. Massachusetts	200.00
34. New York	200.00
35. North Dakota	200.00
36. Texas	200.00
37. Ohio	195.00
38. Indiana	181.00
39. Oklahoma	180.00
40. Alabama	175.00
41. Florida	175.00
42. Rhode Island	175.00
43. Nevada	160.00
44. Vermont	160.00
45. Connecticut	150.00
46. Kansas	150.00
47. New Mexico	150.00
48. Virginia	150.00
49. North Carolina	140.00
50. Puerto Rico	140.00
51. Tennessee	130.00
52. Missouri	115.00

Median Dues — 1981 — \$220.00  
 1980 — \$200.00

\* Medical Society of District of Columbia functions as both State and County Medical Society.

## **Necrology Committee — David E. Gray, M.D., Chairman**

At this time of annual accounting, the Medical Society acknowledges its continuing inability to thwart Death or even produce a distinctive pattern since the loss of its members follows the usual gamut from shocking and unexpected tragedy to blessed relief. Since our last meeting, the following members have died:

<i>Name and Address</i>	<i>Age</i>	<i>Date</i>
Harry O. Anderson, M.D., <i>Wichita</i>	72	3/11/81
A. H. Biermann, M.D., <i>Garden Plain</i>	81	1/29/81
George F. Corrigan, M.D., <i>Wichita</i>	85	2/4/81
Clarence A. Gripkey, M.D., <i>Kansas City</i>	75	4/1/80
Chester W. Haines, M.D., <i>Haven</i>	79	7/5/80
Marshall E. Hyde, M.D., <i>Wichita</i>	63	1/5/81
Clifford E. Jones, M.D., <i>Wichita</i>	58	3/14/81
Robert C. Lawson, Sr., M.D., <i>Topeka</i>	55	2/12/81
Milton E. Lindley, M.D., <i>Wichita</i>	66	3/12/81
DeWitt S. Lowe, M.D., <i>Hiawatha</i>	81	3/10/81
William H. Madden, M.D., <i>Lincoln</i>	56	5/13/80
Dick B. McKee, M.D., <i>Pittsburg</i>	83	12/29/79
Donald N. Medearis, Sr., M.D., <i>Kansas City</i>	79	4/22/80
James T. Moy, M.D., <i>Wichita</i>	66	7/17/80
Clarence J. Weber, M.D., <i>Salina</i>	80	12/27/80
Anna Marie Wenzel, M.D., <i>Hays</i>	85	1/24/81

## **Editorial Board — David E. Gray, M.D., Chairman**

Your Editorial Board takes pleasure this year in pointing with pride rather than viewing with alarm — although the former should not be allowed to get out of hand nor the latter rendered unavailable for future use. In the first of our two worlds, the financial, a glance at the financial report reveals an increase of receipts over disbursements for a modest but black \$3600 gain. The Board gives full credit to the astute stewardship of the Managing Editor and the Business Manager in this accomplishment and claims for itself only a righteous satisfaction for not having diverted this sum to its own pleasures although the point was discussed. Measured against our fellow periodicals, we seem to be obsessively average. Income from advertising, pages of advertising, and other bases of comparison consistently place us in the exact middle. If this seems a modest achievement, I would point out that in the past year some eleven medical periodicals, including one state journal, have passed to that great archive in the sky, so we are content to retain our position of quiet financial mediocrity.

Our editorial world shows a similar favorable balance so we extend a word of thanks to our literary contributors as well as our financial contributors while carefully avoiding any reference to which ones we hold in higher esteem. And just as we count our



favorable bank balance as no indication to withdraw our hands from your pockets, neither do we consider our backlog of papers reason to omit our stock appeal for more since we are addicted to both. The parallel stops here, however. We do consider the scientific content of the *Journal* well above average although the *New England Journal* has displayed no signs of nervousness.

I confess to a note of uneasiness tempering this euphoric condition, though. At times I feel as if the production of the *Journal* runs almost too smoothly. This unusual situation stems, I realize, from the quality of the staff. The Business Manager is a gentleman of well-recognized talents and we are grateful for his sharing them with us and our worldly goods. Eleanor Bell, our editorial assistant, who has become a published author in her own right in the past year with a book of praiseworthy poetry, continues to enhance her value as a force in the *Journal's* production by her careful scrutiny and policing of material and editorial observations.

As for the Managing Editor, I keep thinking I'll find something in her that I can complain about. So far, I have been unsuccessful and any of those who have worked with her in any of her many roles will understand what I mean. Thank you, Val — I'm reluctant to say more for fear she will cancel my contract.

And now comes that breathtaking moment when the Board indulges in its annual gesture of self-satisfaction, the presentation to our president, Phil Godwin, of a year's supply of old *Journals*, hard bound and stamped with his name so he can't exchange them.

## WHAT'S IT WORTH?

**Address by Alan M. Nelson, M.D. —  
Member, AMA Board of Trustees**

I'd like to talk with you today about the AMA, how it has been changed to meet the needs of the membership and what it's worth to you; and I'd like to fill you in on how the Association represents you, the physician member, and those among the physician population who elect not to join all levels of organized medicine, including the AMA. We need to reach these physicians, and convince them that all levels of our federation — including the AMA — do provide them with valuable benefits in return for the several hundred dollars in combined annual dues.

Let's ask each other a series of questions.

What's it worth to have a national association that has represented each of you so successfully through several decades in preserving a pluralistic health

care system, one that preserves freedom of choice for physicians and patients alike, freedoms that would have been lost or compromised under various government suggested health insurance programs?

What's it worth to have a national association that during the past few years has been successful in representing you in the congress and in the courts, in preventing the imposition of pre-admission utilization review regulations for hospital patients and in preventing a federal limit, or cap, on hospital costs?

What's it worth to have a national association that continues to forcefully represent our profession's concerns about medical ethics, advertising, and chiropractic?

Just last January, a U. S. District Court jury in Chicago ruled that the AMA and 12 other defendants were innocent of anti-trust charges filed against the Association by five chiropractors, thus preserving our profession's right to speak out on public health issues of concern to us.

What's it worth to have a strong national political arm, AMPAC, which is integral to the AMA's overall purpose and presence in public affairs? AMPAC supports, in a bipartisan way, those congressional candidates who are committed to the best ends not only of medicine and health but of government itself.

What's it worth to have a national association that can quickly assess and represent you through changes in political philosophy — especially with the new conservative bent of the Reagan Administration and the new Congress? In recent years medicine has often been denied representative participation in the design and implementation of some health policies and programs at various levels of government. Following the November elections, the AMA concluded that the environment in Washington could provide an opportunity to begin regaining this representation. And even before the new Administration took office, key AMA officers had conferred with President Reagan and others in the administration on major health care issues and problems confronting our society, and on the fact that input from everyone involved, including medicine, will be essential to the outcome. Medicine will be well represented by the appointment of Dr. Edward Brandt, Jr., to be Deputy Assistant Secretary for Health, the highest ranking health official at the Department of Health and Human Services. Importantly to the AMA and to you, Dr. Brandt also serves as Chairman of AMA's Section on Medical Schools and is a member of the AMA's Advisory Committee on Continuing Medical Education.

And what's it worth to have a national association that as early as December foresaw the possible shift of healthcare financing and regulation from the federal to state and local governments? So it was during the AMA's Interim Meeting last December, that the House of Delegates urged state and local medical societies to strive to get "health" back into health-care policy-making and programming at their respective levels of government.

And what's it worth to have a national association that can take a careful, introspective look at itself and question everything from ground up in order to propose significant changes to meet the challenges that lie ahead. The AMA Board of Trustees and staff recently concluded just such a hard look.

As a result the Board at its April 1981 meeting recommended that the Association re-order its functions, activities, and resources to better represent the AMA membership. They named a new set of primary functions for the AMA: representing the membership; providing scientific and socio-economic information to the membership and the public; establishing, maintaining, and implementing standards of conduct and performance for the membership; and maintaining and implementing educational standards — a shared responsibility with other organizations. And they named a set of secondary functions: providing training programs for health professionals and providing membership benefits. They named some necessary functions like building membership strength and managing the Association's activities.

The Board also deliberated on three levels of activity for the Association: continuation of the current level of activity, a "must only" level of activity, and a level of activity that is consistent with the Association's new functional profile.

The Board is recommending to the House the third option, a new functional profile, and an implementation plan. The Board approved:

- A program and staffing consolidation plan resulting in selective programming with reduced staff complement;
- A plan for AMA's publications establishing expected levels of fiscal performance;
- A reduction of Association-related social activities at AMA conventions;
- A discontinuation of Regional CME Seminars; and
- A policy establishing dues-exemption only in cases of fiscal hardship.

The Board believes that certain other activities of the AMA do not fit the new functional profile and

can be eliminated or their functions undertaken by other established activities. Therefore, the Board further recommends:

- That the House discontinue the Council on Continuing Physical Education;
- That the House discontinue the Council on Long Range Planning and Development;
- That the House consider discontinuing the Council on Constitution and Bylaws; and
- That the House request a review of the current format for Interim Meetings along with a plan to reduce costs and maintain the high level of member participation.

The Board analysis identifies a new set of primary functions for the AMA:

- Representing the membership to medical education, government, the scientific community, business, labor, and the public;
- Providing scientific and socio-economic information to the membership and the public;
- Establishing, maintaining, and implementing standards of conduct and performance for the membership; and
- Maintaining and implementing educational standards — a shared responsibility with other organizations.

The AMA's secondary and necessary functions are identified as:

- Providing training programs for health professionals;
- Providing membership benefits;
- Building membership strength; and
- Managing the Association's activities.

To fit the financial needs of the new, lean profile, the Board recommends several specific dues adjustments:

- An annual incremental adjustment;
- A \$285 dues level for regular members in 1982. Based on economic conditions and trends, an incremental dues adjustment of approximately \$30 will be needed in 1983 and \$25 in 1984;
- An unchanged dues level for resident physicians and students in 1982;
- A dues level of 10 per cent of regular AMA dues for physicians over 70 years of age starting in 1983. This dues would not be retroactive to physicians reaching age 70 prior to 1983;
- A dues level of two-thirds of the regular AMA dues for physicians in military service;



- An unchanged dues level for physicians in their first year of practice — 50 per cent of regular dues; and
- A dues level of 75 per cent of regular AMA dues for physicians in their second year of practice.

The most recent AMA dues adjustment, in 1976, was designed to carry the Association through 1980. Through sound planning, the Association was able to avoid raising dues until 1982 in the face of the highest rates of inflation ever. The ratio of AMA membership dues to total revenue has decreased every year — from 65 per cent in 1976 to 54 per cent in 1980. The AMA is deriving income from sources other than membership dues, but this income has not kept pace with inflation.

In an opinion survey conducted in February 1981 by Market Opinion Research, graduated or incremental annual dues adjustments were preferred by most physicians who were contacted. Association revenues have increased by an average of 6 per cent per year. Overall AMA expenses have increased by 12 per cent per year. Inflation has been as high as 14 per cent during the past five years. Economic trends show that during the next several years the AMA's operating budget of \$70 million would be affected with a \$7 million loss to the Association.

In response to House of Delegates action in 1974, the AMA built an adequate reserve fund. Sound planning in today's economic climate mandates continued maintenance of adequate resources.

The program that the AMA Board is recommending for House action is comprehensive. It is based on solid research, sound fiscal policies, responsible program and staff consolidation, and reasonable dues adjustments. It is responsive to the challenges that face the profession. It will effectively represent the current membership, while actively seeking to involve increasing numbers of America's physicians in the important activities of the Association in the years ahead.

So, what's it worth? It's worth your support! Because involvement is the hallmark of our profession.

**The Kansas Foundation for  
Medical Care, Inc. —  
Louis M. Culp, M.D., President**

It is my pleasure to again address this House of Delegates to update you on the activities of the Kansas Foundation for Medical Care. Since last year's report to the House, the KFMC has been very active.

A Modified Review Program was implemented during this last year in which physicians who meet

certain criteria are waived from review requirements. Presently, 46 percent of physicians in the state are waived from review. The Modified Review Program enables us to focus our review where it is necessary, and eliminate review where indicated.

The KFMC, the Kansas Medical Society, and the Kansas Hospital Association developed a list of about 70 procedures to be performed on an outpatient basis, unless contraindicated. Six exclusions were insisted on. This was developed, after considerable work by the Kansas Medical Society Welfare Advisory Committee, the KFMC Education and Criteria Committee, and Executive Committees. Based on six months worth of data, this program will save SRS about \$700,000 during the first year of implementation.

In September, the KFMC underwent an intensive four-day assessment which covered every aspect of our operation and was performed by a sophisticated PSRO assessment team. We had excellent participation by Kansas physicians during this assessment, and the final results indicate that KFMC is a well organized, well managed organization which has carried out its duties as the PSRO for Kansas in an effective, efficient manner. Copies of the assessment report are available from the KFMC office.

During the past year, the KFMC began the development of an Ancillary Services Review Program. The Board of Directors asked the KFMC Advisory group to assume the responsibility for organizing and directing a task force approach, involving physician and non-physician health professionals, to develop the Ancillary Services Review Plan. The plan is in the final stages of development at this time, and will be presented to the Board in September. The initial two areas for review will be laboratory and radiology services.

KFMC physicians and staff have developed and implemented several educational programs and projects during the past year. These have been in such areas as a PSRO/HSA Workshop, a Discharge Planning Seminar, and numerous presentations to hospital staffs and to component medical societies. We also developed two patient education brochures and a physician advisor manual, as well as a newsletter, the *KFMC UPDATE*, which we hope will be a valuable tool for keeping physicians and others up to date on KFMC activities. Additionally, KFMC physicians and staff have attended many national meetings both to make presentations on KFMC procedures and programs, and to gain knowledge about areas of interest.

As with any organization, a well defined set of goals and objectives is necessary to carry out corpo-

rate responsibilities. The KFMC has utilized specific Board approved grant and corporate objectives for several years, and has consistently achieved a vast majority of those objectives. By achieving our objectives, KFMC can demonstrate and document positive impact in the areas of quality assurance and utilization.

As you know, KFMC and PSRO are facing a somewhat uncertain future due to President Reagan's proposed phase-out of the program. This House of Delegates will vote on the issue of support for PSRO at this meeting. There are several factors involved in the current situation that must be addressed in an objective manner by the physicians of Kansas. We hope you will put aside the emotional aspects, and address the facts.

There is a naive sense of euphoria by some in that they believe this administration is going to "get government off their backs" and out of the health care delivery system. When one observes the amount of money spent by the government in the delivery of health care, it seems very unlikely that the Congress will adopt a "hands off" attitude about those expenditures. On a recent trip to Washington, we learned first hand from our Kansas Congressional Delegation that if PSRO is phased out, it won't be long before there is some alternative review program. It is questionable whether that alternative review program would address quality assurance; cost containment methods, though, will definitely be utilized. The question at hand is whether that alternative will be utilized, or will PSRO continue.

At the April 5 meeting of the KFMC Board of Directors, factors involved in this issue were thoroughly discussed by the members present. At that meeting, the following points were made:

1. The Kansas Foundation for Medical Care has proven to be a cost effective, efficient peer review program which can demonstrate positive impact in the areas of quality assurance and utilization. For those of you who are interested in the cost of the program, a definite, but conservative, figure has been determined of \$731,692 saved over our cost during the past year. We have the figures if you wish to see them.
2. If the PSRO program is phased out, there is sure to be an alternative mechanism set up to review the medical necessity and appropriateness of medical services provided to beneficiaries or recipients of federal health programs.
3. Under an alternative system, not involving physicians, cost containment will surely be

emphasized at the expense of quality assurance.

4. The alternative system will not be under the direction of a physician run organization such as KFMC, nor will it be possible to have direct local physician input such as under KFMC.
5. The alternative system will likely be run under the direction of a state welfare agency or federal fiscal intermediary.
6. State medical societies, such as the Medical Society of New York, have recently voted strong support for the PSRO program as the best mechanism for physician-controlled peer review.
7. Private industry, such as the Washington Business Group on Health representing 200 companies and 50 million employees, strongly supports the PSRO program.
8. Almost 1,900 Kansas physicians are members of the KFMC.
9. There is significant strong support by many physicians in Kansas for KFMC and PSRO.
10. There is no better or workable alternative to PSRO.
11. The prospective alternative to PSRO is much more onerous than PSRO because it presages more government involvement and less physician involvement.
12. Physicians in Kansas must act now to make every effort to retain control of the review program by voicing strong support for the continuation of PSRO under the direction of the KFMC.

Also at that meeting, the Board decided to retain the present officers and members until September of this year in order to retain a sense of continuity during this uncertain period.

Yesterday, the U. S. House of Representatives in Washington passed President Reagan's budget. This is only a lid, and does not mean PSRO is not going to be funded. Funding decisions are made in the appropriations subcommittees. Our biggest support came last week with Senator Dole's stand to retain the PSRO program, even though he advocated some more severe cuts otherwise.

The KFMC has recently been notified that we meet the criteria for becoming a fully designated PSRO. Within the next year, the KFMC should receive that designation.

To summarize, the KFMC is an effective, efficient peer review organization which has demonstrated a positive impact in Kansas. The alternative to PSRO is much less desirable, and will involve less physician input and control. Congress will act on the

*(Continued on page 303)*



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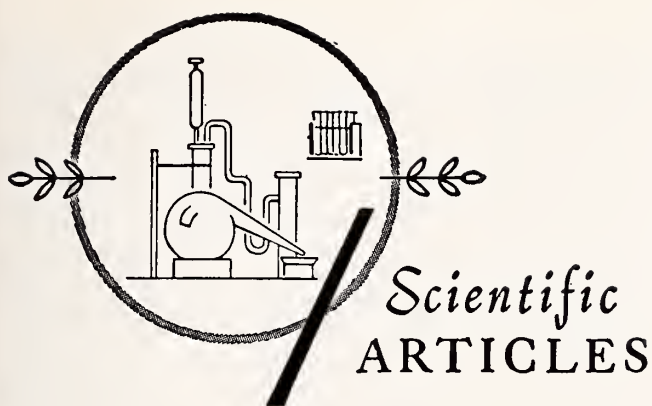


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# The Ischemic Extremity

## *Diagnostic and Therapeutic Techniques of an Aggressive Approach*

JOSEPH E. BOSILJEVAC, M.D.\* and S. JIM FARHA, M.D.,† Wichita

VASCULAR SURGERY has achieved significant advances during the past 25 years. Approaches may vary since vascular surgery is performed by general surgeons, cardiovascular surgeons, and specialists in peripheral vascular surgery. We present here a review of our approach to the patient with limb-threatening ischemia, as well as some of the recent advances in this area. Many patients followed after vascular surgery may experience subsequent ischemia or graft occlusion. As the number of patients undergoing vascular reconstruction increases, a discussion of the approach to these problems becomes pertinent. Our approach to these more complicated vascular problems will be presented in the July issue of the *Journal*.

### Diagnosis

When evaluating a patient with limb-threatening ischemia, the bedside examination is still the mainstay in the diagnosis, and should provide greater than 90 per cent accuracy. Occasionally, distal pulses which are felt because extensive collaterals exist may disappear with exercise. Although applications of the clinical laboratory and angiography

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**Experience in our hospital demonstrates an aggressive approach to patients with limb-threatening ischemia. Presented is a review of diagnostic and therapeutic techniques utilized in this approach.**

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are useful adjunctive procedures, the bedside examination is still the most important.

Applications of the clinical laboratory provide quantitative and functional information.<sup>1</sup> The static, or Doppler ultrasound examination quantitates segmental pressures in the ischemic extremity. Segmental drops in arterial pressure, as measured by Doppler, may indicate areas of marked arterial resistance. These may be charted quantitatively, as the value for each segmental pressure, or as a ratio. One common notation is the ankle-arm index. For example, if the brachial pressure is 120 mmHg systolic and the ankle pressure measures 60 mmHg, the ankle-arm index is 0.5. This does not identify the level of the lesion, but simply demonstrates that an area of marked resistance exists in the lower extremity arterial tree.

Quantitative segmental pressures aid in localization. Functional tests, such as the treadmill or the reactive hyperemia test, determine: (1) decreases in pressure that occur with exercise; and (2) recovery time for return of pulses after exercise. Thus, the functional significance of lesions seen on angiography can be determined.

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Clinical laboratory measurements are useful: (1) for corroborating an anatomic diagnosis in difficult cases, particularly those of neurospinal disease, nerve entrapment, or peripheral neuropathy; (2) to screen high risk patients, such as those with diabetes; (3) to quantitate the deficit or to determine the functional significance. For example, a lesion that appears minimal on angiograms may have marked significance because of the Doppler findings. Also, a large lesion seen on angiography, because of good collaterals, may not be as significant. It further aids: (4) attempts to predict therapeutic success or the amputation level (with variable results); (5) to monitor postoperative success; and (6) to follow the patient postoperatively.

Angiography is required to define the anatomy for the surgeon. Biplane views should be routine on any surgical candidate. In the mid-1960s, Haimovici showed that antero-posterior films alone of the aortoiliac arteries are misleading in 40 per cent of cases. Antero-posterior angiograms alone will miss a significant plaque in the profunda femoris artery in 25-50 per cent of cases. This demonstrates that angiograms, particularly if biplane views are not obtained, are not 100 per cent accurate. Measurements of Doppler pressure gradients aid in determining the functional significance of lesions when the angiogram itself is not diagnostic.

### Primary Ischemia

In general, an aggressive approach is indicated when approaching a patient with limb-threatening ischemia.<sup>2-4</sup> There is controversy in the literature about the difference in management of a patient with an embolus *vs* a thrombus.<sup>5</sup> Clinically, it is sometimes difficult to determine which entity exists, but we emphasize an aggressive approach with both. The extent and the duration of the ischemia are more important factors, and this will be discussed later. In the examination of the patient, presence or absence of pulses should be noted. Temperature or color demarcation, anesthesia or paresthesias of the skin, and paralysis of any major muscle groups will influence the prognosis in acute occlusion. Several procedures are available to the surgeon in treating these patients.

The first procedure — embolectomy — should be performed unless frank gangrenous changes are present.<sup>6</sup> Since these patients have some underlying cause for the embolus, it is important to treat the associated condition. This may be congestive heart failure, atrial fibrillation, or fluid and electrolyte problems. A preoperative arteriogram is indicated in

acute occlusion when there is a questionable diagnosis, to determine the extent and level of the ischemia, and to evaluate the presence of associated distal occlusive disease. The importance of back-bleeding is sometimes overemphasized. Good back-bleeding may be obtained after clearing the artery to its first branch, so this alone may be misleading. Intra-operative arteriograms are more accurate to detect technical errors and additional clot, and to assess the run-off in the distal arterial tree.<sup>7</sup> Depending on the run-off, bypass grafting or no further operation may be recommended. Adjunctive fasciotomy should be considered if the duration of the ischemia has been several hours.

Isolated profundoplasty has also been used for limb salvage.<sup>8</sup> It is unusual to have a symptomatic patient present with an isolated profunda lesion. The only isolated lesions that are probably clinically significant are iliac artery or popliteal artery stenosis. Most profunda lesions are seen in combination with other lesions, particularly occlusion of the superficial femoral artery. So when a profunda lesion is seen, other lesions should be suspected. Oblique arteriograms are necessary to adequately assess the origin of the profunda femoris artery. Despite the British experience of isolated profundoplasty, current recommendations are that 80 per cent of profundoplasties should be adjunctive; that is, performed with an aortofemoral bifurcation graft to increase the run-off. The results of isolated profundoplasty in limb salvage cases have not been good enough to recommend this as an isolated procedure.

Femoropopliteal bypass should be performed for rest pain, gangrene or ulcers, but not for claudication alone. Szilagyi<sup>9</sup> demonstrated that in cases of failed femoropopliteal bypass, the amputation level may be more proximal, converting a below-knee to an above-knee amputation. Interruption of significant collaterals prompts conservatism in the recommendation of this procedure. Saphenous vein is the recommended grafting material. Gortex (PTFE) can be used if saphenous vein is not available, although long term patency is not as good. Glutaraldehyde-tanned umbilical vein has also been used with good short term results.

Femorotibial or femoral-distal bypass is indicated for limb salvage only.<sup>10, 11</sup> A pedal arch seen on angiograms, either intra-operatively or preoperatively, assures run-off for the graft. Good results should be obtained if it is visualized. The pedal arch is usually fed by either the anterior tibial or the posterior tibial artery. Autopsy studies have demonstrated that the embolectomy catheter usually takes a straight course down the trifurcation vessels, passing



most frequently into the peroneal artery. In the majority of patients, the peroneal artery does not feed the pedal arch. Less favorable results are seen when this vessel is used for the distal bypass. This also explains failure of limb salvage in embolectomy when the Fogarty catheter passes to the ankle, but the more important vessels cannot be cleared.

Extra-anatomic bypass, such as the femorofemoral bypass, is indicated in high risk patients when abdominal operation is contra-indicated. McDonald and Rich<sup>12</sup> have shown that failure to visualize angiographically adequate recipient vessels is not a contraindication to groin exploration and grafting. If femoral pulse is absent but the foot is viable, they found that all patients had a patent profunda, whether or not this showed on preoperative angiogram. The importance of donor inflow is stressed, since the donor artery must increase flow to feed the anatomic arterial bed plus the femorofemoral bypass graft.<sup>13</sup> The inflow to the donor artery can be assessed by angiography or by intra-operative femoral pressure measurements. Current recommendations for femorofemoral bypass are: (1) for limb salvage, a good inflow or run-off are needed, and this should not be performed if both are missing; (2) for claudication, the femorofemoral bypass should be performed only if both good inflow and run-off are present.

There are other considerations when approaching a patient with an acutely ischemic extremity. Reversible ischemia may be present secondary to hypovolemia or diuretics.<sup>14</sup> These patients usually have palpable popliteal or pedal pulses. Certain drug combinations may result in peripheral ischemia. Theophylline decreases the enzymatic destruction of cyclic AMP, and will potentiate the catecholamine response to digitalis and dopamine. Arrhythmias and increased peripheral sympathetic vasomotor tone are seen. Heparin induced thrombosis, otherwise known as the white clot syndrome or paradoxical thrombosis, has also been described. Some patients, after prior exposure to heparin, develop antibodies that result in abnormal platelet aggregation upon subsequent exposure to heparin. Bernhard and Towne<sup>15</sup> have demonstrated that this entity is due to increased platelet aggregation, and they recommend obtaining a platelet count after the institution of heparin therapy. If the platelets become markedly decreased, platelet aggregation studies are indicated. If these are abnormal, treatment should be changed to dextran and warfarin.

Medical treatment in advanced arteriosclerosis obliterans of the lower extremity has also been evaluated.<sup>16</sup> Intra-arterial prostacyclin and

papaverine have been used. Prostacyclin, a prostaglandin derivative, is a very potent vasodilator and a platelet anti-aggregation agent. These drugs have been used for rest pain and ulcers in patients who are either poor surgical risks or unsuitable for reconstruction by angiography. After treating these patients by intra-arterial infusion with these agents, the angiographic appearance of the major blood vessels remains the same. However, there is an increase in muscle blood flow shown by xenon nuclear medicine scanning techniques. Impressive results have been reported as far as increasing claudication distance and limb salvage using these drugs in selected patients.

Although not generally appreciated, a review of the literature shows the current mortality rate for acute arterial ischemia approximates 25 per cent. In part, this may occur following embolectomy when toxins and procoagulants are released from the dying limb, leading to pulmonary and renal problems. This, of course, is related to the extent, duration, and degree of ischemia. For this reason, Blaisdell advocates a greater reliance on heparin alone and the lesser use of embolectomy.<sup>17</sup> High dose heparin (a 20,000 unit intravenous bolus followed by intravenous infusion of 2,000-4,000 units/hr) was used in the series he presented. If there was a contraindication to heparin, then operative removal of the clot was attempted, or primary amputation if the limb was not viable. Fifty-four patients with acute arterial ischemia were divided into four groups treated by: immediate thrombectomy; high dose heparin alone; immediate amputation; and some who received no treatment because of very poor medical status. Overall, a 7 per cent mortality rate was achieved, but a much higher amputation rate than is generally recorded in the literature for this problem. Blaisdell felt that he was trading limbs for lives, which he felt was a very justifiable trade.

When an embolus lodges in the vascular tree, there is initially a protective distal spasm. As the anoxia persists, the vessels relax and the thrombus propagates into the distal micro-vasculature. At this point, the ischemia is irreversible. If the limb is viable, Blaisdell feels this viability is protected using high dose heparin to prevent propagation of the thrombus. If the limb is not viable, treatment with heparin alone or amputation is preferred over an embolectomy. According to Blaisdell, this avoids harm to the patient when clots are removed and ischemic tissue is reperfused.

This controversial concept prompted a review of the experience at Wesley Medical Center. Charts of 42 patients with acute peripheral occlusion during a



TABLE I  
EMBOLECTOMY — WMC (1976-78)

Age & Sex	Level	Degree of Ischemia	Result
78♂	Midcalf	1	Viable
51♀	Midcalf	1	Viable
80♀	Midcalf	1	Viable
69♀	Midcalf	1	Viable
64♂	Midcalf	1	Viable
78♀	Midthigh	1	Viable
57♂	Midthigh	1	Viable
56♀	Midthigh	1	Viable
65♂	Midcalf	1	Viable
55♂	Midcalf	1	Viable
71♂	Midcalf	1	Viable

three-year period were reviewed. Sixty per cent had a cardiac source for the occlusion documented in the chart. Thirty-seven patients were treated by embolectomy; one by immediate amputation; one by heparin alone; and three received no treatment. The patients treated by embolectomy were then divided into three groups depending on the degree of ischemia. Degree 1 was defined as color or temperature demarcation alone; degree 2, the color and temperature demarcation plus anesthesia or paresthesias of the skin; and degree 3, paralysis of a major muscle

group and the findings of degree 2 ischemia. Results can be seen in *Tables I, II* and *III*. Embolectomy performed on patients with degree 1 ischemia always resulted in viable limbs. Embolectomy performed on patients with degree 2 ischemia resulted in two deaths and one amputation. Duration of the ischemia is noted if there was accurate documentation on the chart. The one amputation in this group was seen in a patient who was hospitalized for another reason when the embolus occurred. Embolectomy performed within four hours did not result in limb salvage.

The interesting finding was in patients with degree 3 ischemia. After embolectomy, half the patients died and half eventually had amputations. Overall, the mortality rate for embolectomy at Wesley during this time period was 22 per cent, which is similar to the 25 per cent reported in the literature. The concern is that an aggressive embolectomy may actually be harmful in some patients. Certainly, this brings up the controversy of the approach to a patient with acute ischemia due to an embolus vs thrombus, as well as the extent, degree, and duration of ischemia.<sup>2, 4-6, 17</sup> Our current recommendation is that embolectomy be performed unless frank gangrenous changes are present.

Another consideration in the ischemic extremity is the entity of atherosclerotic emboli, or blue toe syndrome.<sup>18</sup> This syndrome was first defined in the early 1960s, although most of the related literature

TABLE II  
EMBOLECTOMY — WMC (1976-78)

Age & Sex	Level	Degree of Ischemia (Duration)	Result
61♂	Midcalf	2	Viable
66♂	Midthigh	2 ( 4 hrs)	Viable
78♀	Midcalf	2 ( 5 hrs)	Viable
31♂	Midcalf	2	Viable
69♂	Midcalf	2	Viable
77♀	Midthigh	2 (10 hrs)	Died
53♂	Knee	2 ( 4 hrs)	BK
66♂	Ankle	2	Viable
58♂	Knee	2 ( 4 hrs)	Viable
78♀	Midcalf	2 ( 6 hrs)	Viable
73♀	Midcalf	2 ( 8 hrs)	Viable
67♂	Foot	2 (10 hrs)	Died
85♂	Midcalf	2 ( 3 days)	Viable
34♂	Midcalf	2 ( 4 hrs)	Viable

NOTE: Duration of ischemia is recorded if accurately documented in the chart.

TABLE III  
EMBOLECTOMY — WMC (1976-78)

Age & Sex	Level	Degree of Ischemia (Duration)	Result
79♀	Midcalf	3 ( 4 days)	Died
88♀	Midcalf	3 (12 hrs)	Died
56♂	Midcalf	3	Died
68♂	Midthigh	3	Died
87♀	Midcalf	3 (18 hrs)	AK
77♀	Midcalf	3	Died
80♂	Midthigh	3	Died
79♀	Knee	3 ( 8 hrs)	BK
68♂	Midthigh	3 ( 4 hrs)	AK
72♂	Midthigh	3 ( 6 hrs)	AK
80♂	Toes	3 ( 3 days)	BK
70♂	Midthigh	3 (12 hrs)	AK

AK — Above knee amputation  
BK — Below knee amputation  
NOTE: Duration of ischemia is recorded if accurately documented in the chart.



Figure 1. Focal digital ischemia (blue toe syndrome).



Figure 2. Pretibial ulceration (blue toe syndrome).

has appeared in the past five years. Ulcerative lesions or gangrene may be caused by (1) a thrombus, which forms on a plaque and embolizes; (2) platelet aggregates that embolize; or (3) cholesterol particles from the plaque itself. The blue toe syndrome is caused by embolization of cholesterol particles, which leads to an intense inflammatory reaction. It is not associated with the severity of aortoiliac disease. The macroembolic type presents as a major blood vessel embolus with acute ischemia, loss of pulses, and absence of a cardiac lesion of origin. The microembolic type presents a confusing clinical picture with a variety of signs and symptoms. The key to diagnosis is the finding of intact distal pulses.

Focal digital ischemia is seen in about 85 per cent of patients (Figure 1). Fixed livedo reticularis, or mottling of the skin, occurs in about 15% of these patients. Transient livedo reticularis suggests a hemodynamic origin. The ulcerative lesions are usually progressive; there is a predisposition for the prepatellar area or calcaneus (Figure 2), although ulcerations have been described in the anterior abdominal wall. The vast majority of the cholesterol emboli originate from plaques in the aortoiliac segments, and only a small number from the femoral-

popliteal segments. Most patients have the microembolic type. Muscle and skin biopsy will confirm the diagnosis when cholesterol crystals are seen microscopically.

Aortography is necessary to define the origin of these emboli. Since the majority of these lesions occur in the aortoiliac segment, biplane views must be obtained or significant solitary anterior or posterior plaques will be missed. As far as treatment, anticoagulants are entirely unsuccessful, and in fact, may be contraindicated since they prevent formation of a protective thrombus on the surface of an ulcerated plaque. Platelet suppression is not proven. The treatment of choice is surgical — either thromboendarterectomy for a localized lesion or, as is necessary in most cases, graft replacement and arterial exclusion. The artery must be excluded by ligation from the blood stream after graft replacement is performed, and this is the only acceptable treatment at this time.

### Summary

An aggressive approach to patients with limb-threatening ischemia is emphasized. A discussion of  
(Continued on page 284)



# Prostatic Carcinoma

## *Treatment with I<sup>125</sup> Interstitial Irradiation and Pelvic Lymphadenectomy*

WINSTON K. MEBUST, M.D.; JOHN W. WEIGEL, M.D. and  
EASHWER K. REDDY, M.D., *Kansas City, Kansas*

DEFINITIVE THERAPY for prostatic carcinoma confined to the prostate has traditionally been radical prostatectomy. The success rate of radical surgery in curing patients without metastatic carcinoma has been good, particularly in patients with a histologic, low-grade, small, palpable nodule. However, the complications of radical prostatectomy such as a 100 per cent incidence of impotence, a significant incidence of urinary incontinence, and urethral stricture have caused many urologists to consider other modalities of therapy.

Radiation therapy for the treatment of prostatic cancer was first used with intraurethral radium capsules by Pasdeau and Degrais in 1909 in Paris. Beringer, in 1915, treated prostatic carcinoma with radon needles inserted into the prostate. However, with the discovery that prostatic carcinoma was hormonally dependent and with the spectacular therapeutic results obtained by the administration of estrogen or castration reported by Charles Huggins in the 1940s, the use of radiotherapy diminished. Radical prostatectomy for stages A, B, and occasionally C prostatic carcinoma remained an accepted therapy. In the early 1950s, the development of radioisotopes for clinical medicine opened a new era for treatment of prostatic carcinoma. In 1951, Flocks<sup>1</sup> reported the use of colloidal gold (AU 198) injected directly into the prostate surgically exposed. Using Flocks' technique, a high quantity of radioactive material that could destroy the neoplastic process could be injected directly into the neoplasm. It was hoped that there would be minimal damaging effect on surrounding normal tissue, and that the complications of radical prostatectomy such as impotence and incontinence could thus be avoided. Many other radioisotopes were used but none seemed satisfactory because of damage to normal surrounding tissue, irradiation exposure to personnel, and problems with storing the isotope. Howev-

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**The development of radioisotopes for clinical medicine opened a new era for treatment of prostatic carcinoma. Treatment utilizing interstitial irradiation with I<sup>125</sup> and pelvic lymphadenectomy appears to offer an excellent alternative to radical prostatectomy with a minimum of associated side effects.**

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er, in 1972, Whitmore<sup>2</sup> reported the use of I<sup>125</sup> pellets in a small series of patients with prostatic cancer. These were 16-gauge titanium-coated pellets 4.5 millimeters in length. They could be inserted directly into the prostate at the time of surgery and, with a finger in the rectum, could be placed precisely into the neoplastic tissue. The half life of I<sup>125</sup> is 60 days which eliminates the problem of shelf storage. With the prolonged half life, the prostate would receive a total of 8000 rads in two months and 16,000 rads in one year. This seems to be ideal for prostatic carcinoma which is a very slow growing tumor. Half layer value reactive tissue penetration was 2 centimeters with I<sup>125</sup> compared to 6 centimeters with AU 198. It is therefore possible to get an extensive amount of irradiation into the prostate and not damage surrounding tissues such as the bladder and rectum. However, this limited tissue half layer value means that the needles have to be placed precisely within the tumor to avoid "cold spots" that would permit non-irradiated, viable, prostatic carcinoma to remain. Therefore, a radiotherapist well trained in this technique is critical to the success of the procedure.

Pelvic lymphadenectomy to surgically stage prostatic carcinoma has become increasingly important. It has been well known that patients with tumor presumably confined to the prostate have been found to have positive pelvic lymph nodes at the time of surgery. The presence of such nodes markedly reduces the result of any therapeutic procedure such as radical prostatectomy or interstitial irradiation. The presence of positive nodes warrants consideration of supplemental wide field, pelvic, external beam irra-

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diation or — if the nodes are extensive — a palliative procedure such as hormonal therapy. There is some suggestion that in patients with a small volume of positive lymph nodes, a pelvic lymphadenectomy may be therapeutic, but at this time it still must be considered a staging procedure. Because of the encouraging results reported by the New York Memorial group in 1972 and in their series,<sup>3, 4</sup> which is now 300 patients, we began a program in July 1976 of treating prostatic carcinoma confined to the prostate in good risk patients with pelvic lymphadenectomy and I<sup>125</sup> and, in those with positive nodes, supplementary external beam irradiation to the pelvic and periaortic nodes.

### Material

From July 1976 through January 1980, a total of 50 patients with stages A<sub>2</sub>, B<sub>1</sub>, and C prostatic carcinoma have undergone pelvic lymphadenectomy and I<sup>125</sup> interstitial irradiation. Ages ranged from 41 to 77 yrs with an average of 62.5 yrs. The patients have been followed for 1-43 months with an average followup of 18 months. Seventeen patients have been followed for less than one year. All patients received a technetium polyphosphate bone scan, intravenous pyelogram, and serum acid phosphatase by the standard substrate method and radioimmunoassay technique. The majority were cystoscoped, particularly those who had undergone a prior transurethral resection of the prostate. In some patients who had had a prior transurethral prostatectomy, there was insufficient tissue remaining to permit the insertion of I<sup>125</sup> needles. These patients subsequently received external beam cobalt irradiation only. In those patients with voiding symptoms, a limited transurethral resection was done prior to surgery. In a few cases, resection was performed after the insertion of the needles because of severe obstructive symptoms. Pedal lymphangiography was not done because this is a grossly inaccurate method of evaluating the obturator and internal iliac lymphatic chains which primarily drain the prostate. More recently, computerized axial tomography of the pelvis has been

used to assay the pelvic nodes but its precise role in determining the stage of the cancer is unclear at this time. The clinical stages and those subsequently found to have positive lymph nodes at the time of surgery are listed in *Table I*. The most common clinical stages were B<sub>1</sub> and B<sub>2</sub>. At the time of surgery, 70 per cent of those with stage C lesions were found to have positive lymph nodes. Twenty per cent of those with A<sub>2</sub> lesions were found to have positive nodes supporting the concept that A<sub>2</sub> multifocal, occult, prostatic carcinoma is a more virulent malignancy than the classic occult, well differentiated, single-focus lesion. All of the stage D lesions were considered to be D<sub>1</sub> (less than 3 cc of positive nodes) except three of the five initially thought to be stage C but which were, in fact, D<sub>2</sub> lesions with nodes extending above the bifurcation of the external and internal iliacs along the common iliacs up to the aorta.

### Results

The average time of operation was 3½ hrs. This is the combined time for completion of the pelvic lymphadenectomy by the urologist plus the time required for the radiotherapist and his associates to prepare and to insert the I<sup>125</sup> pellets into the prostate. Average blood loss was 1000 cc, ranging from 200 to 4750 cc. Most blood was lost from the puncture sites in the prostatic capsule where the pellets were inserted. The technique of insertion of I<sup>125</sup> needles is illustrated in *Figure 1*. Preoperatively, patients underwent a bowel preparation to reduce wound infection by contamination from bacterial flora from the rectum. The patients were also placed on a pro-

TABLE I

Clinical Stages — Initial	Final Stage — Surgery — D Lesions	
A <sub>2</sub> - 5	1/5	20%
B <sub>1</sub> - 14	2/14	14%
B <sub>2</sub> - 24	3/24	12½%
C - 7	5/7	71%

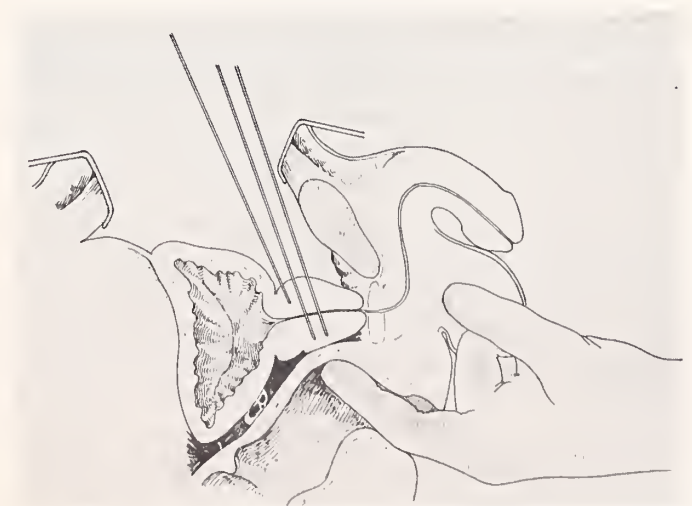


Figure 1. Technique of insertion of I<sup>125</sup> pellets into the prostate.



TABLE II  
POSTOPERATIVE COMPLICATIONS

Edema	8
Prolonged drainage	4
Wound infection	2
Epididymitis	2
Ileus	1
Obturator nerve injury	1
Pulmonary embolism	1
Postop. hemorrhage	1
Thrombophlebitis	<u>1</u>
	21

gram of mini-heparinization preoperatively and, at the time of surgery, their legs wrapped with elastic bandages. The patients were placed in a modified lithotomy position.

Seventeen patients (34%) had 21 postoperative complications (*Table II*). The most common was transient scrotal or leg edema in eight patients and prolonged drainage from the retropubic space in four patients. There were only two incidences of wound infection and one patient had a transient obturator nerve palsy. One patient had a non-fatal pulmonary embolism and subsequently all patients were placed on the mini-heparinization program preoperatively. The average hospital stay was ten days. In the postoperative period, all patients developed marked swelling and induration of the prostate but this subsided in the majority by one year with some still having residual induration, and those who have been followed for two years have been found to have a relatively normal-feeling prostate. The delayed complications are listed in *Table III*. Edema of the legs occurred in eight patients ranging from three to 12 months after treatment with an average of 6.2 months. These were managed by elastic stockings and the edema was not permanent. The most disturbing complication was significant dysuria and urinary frequency which occurred in nine patients. This ranged from two to 12 months or longer with an average of 6.1 months. The most severe was in a patient with a mucinous producing carcinoma of the prostate which failed to respond to external beam cobalt irradiation but did respond to pelvic lymphadenectomy and I<sup>125</sup> needle insertion. However, his urinary symptoms persisted for approximately 18 months. Only one of our patients (2%) has reported impotence since this procedure. This is comparable to the report by Whitmore and his associates who noted an impotency rate of 7 per cent in more than 300 cases. In comparing our immediate and delayed

TABLE III  
DELAYED COMPLICATIONS

Edema	8	3-12 mos.	Avg. 6.2 mos.
Dysuria	9	2-12 mos.	Avg. 6.1 mos.
Painful ejaculation	3		
Impotence	1		
Pulmonary embolism	1		
Pelvic hematoma	1		
Incontinence	<u>1</u>		
	24		

complications with those of the New York Memorial group,<sup>5</sup> it would appear that we have a somewhat higher rate but this should reduce as our series increases in number. In those patients where the disease has been confined to the prostate, we have noted that two of 39 developed metastasis at 18 and 20 months (5%). Of those 11 patients who were found to have stage D disease at the time of surgery three of 11 (27%) have developed clinical metastasis. The remainder of the patients are doing well without evidence of spread of the disease as determined by serial bone scans and determination of acid phosphatase by the radioimmunoassay technique as well as physical examination. There were no operative deaths in this series.

The role of prostatic biopsy post therapy remains controversial. In a number of series of patients undergoing external beam irradiation to the prostate, sequential biopsies during a several months' or several years' period of time have demonstrated patients with positive biopsies but without evidence of progression of the disease. This has raised the possibility that the tumor noted to be histologically carcinoma may not be a viable lesion (*Figures 2a and 2b*). In the few series reported by others using external beam cobalt only, 50 per cent of those patients biopsied have been positive at one year but again, no conclusion can be drawn as to the prognosis of the positive biopsy. It has been our feeling that patients who are willing to undergo a biopsy should be offered this opportunity primarily as a research procedure. It has been carefully explained to the patient that a positive biopsy will probably not affect their therapy, *e.g.* resorting to a radical prostatectomy. However, if the biopsy were negative and the patient has had a definite clinical response, one might well assume that the cancer, at least locally, is no longer present. Therefore, of the 33 patients at risk for one year or longer, 14 have submitted to biopsy and approximately 50 per cent have been positive. All

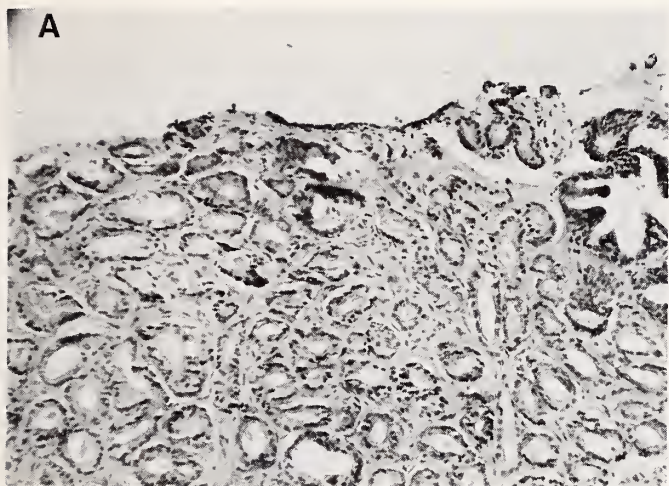


Figure 2a. Preoperative well-differentiated adenocarcinoma.

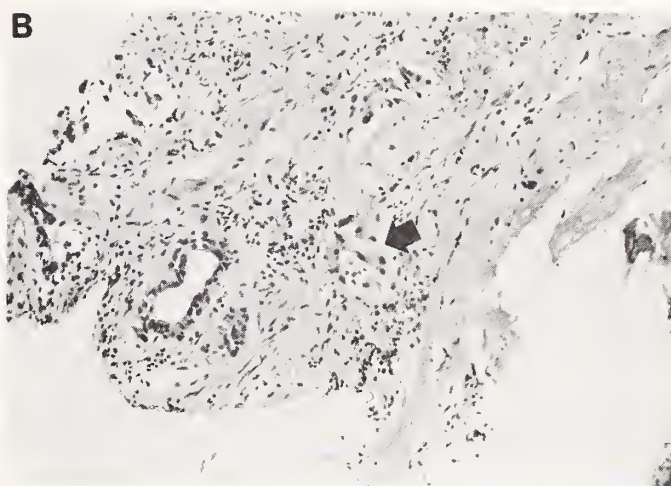


Figure 2b. Biopsy of same patient one year post  $I^{125}$ . Small area interpreted as possible residual carcinoma, but radiation effect could not be ruled out.

patients, particularly those who have been biopsied, will be followed very closely to determine if there is some correlation between the biopsy report and progression or non-progression of the disease.

### Conclusion

Any procedure used to treat prostatic carcinoma definitely when it is confined to the prostate requires approximately 15 years of careful evaluation before conclusions can be drawn as to its efficacy. The tumor is slow growing and those patients who develop recurrence may die of disease other than the carcinoma. The preliminary reports from Whitmore's group suggest that the results of  $I^{125}$  interstitial irradiation are comparable to radical prostatectomy. At this time, we feel that interstitial irradiation with  $I^{125}$  and pelvic lymphadenectomy offers an excellent alternative to radical prostatectomy. The incidence of impotence is exceedingly low and the significant complications of a contracted bladder, radiation injury to the bowel and urethral stricture, which are found in patients undergoing radical prostatectomy or definitive external beam irradiation, are rare. The tumor is precisely staged at the time of surgery and if adjuvant therapy is warranted, it can be undertaken immediately. The radioactive pellets may be precisely inserted into the neoplastic prostate and 16,000 rads delivered to the cancerous area during a one-year period of time.

### References

1. Flocks, R. H.; Kerr, H. D.; Elkins, H. B. and Culp, D.: Treatment of carcinoma of the prostate with interstitial radiation with radioactive gold, (AU 198): A preliminary report. *J. Urol.* 68:510-522, 1951.
2. Whitmore, W. F.; Hilaris, B. S. and Grabstald, H.: Retro-pubic implantation of  $I^{125}$  in the treatment of prostatic cancer. *J. Urol.* 108:918-920, 1972.
3. Whitmore, W. F.; Hilaris, B. S.; Grabstald, H. and Batata, M. A.: Implantation of  $I^{125}$  in prostatic cancer. *Surg. Clin. North Am.* 54:887-895, 1974.
4. Hilaris, B. S.; Whitmore, W. F.; Batata, M. A. and Grabstald, H.: Radiation therapy and pelvic lymph node dissection in the management of cancer of the prostate. *Am. J. Roentgenol. Radium Ther. Nucl. Med.* 121:832-838, 1974.
5. Fowler, J. E.; Barzell, W.; Hilaris, B. S. and Whitmore, W. F.: Complications of  $I^{125}$  implantation and pelvic lymphadenectomy in the treatment of prostatic cancer. *J. Urol.* 121:447-451, 1979.

### Council Meeting

(Continued from page 258)

bilities further. Staff was instructed to make initial inquiries and report back at a later date.

The staff was also instructed to review the possibility of distributing a Relative Value Studies, and to report to the Executive Committee.

Dr. Hiesterman announced that the Executive Committee will be receiving periodic reports to review all those resolutions more than five years old.

The Council adjourned at 11:30 AM.



# Juvenile Ketoacidosis

## *The Use of Sodium Bicarbonate in the Treatment of Diabetic Children*

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CONTROVERSY has existed regarding the use of sodium bicarbonate in the treatment of diabetic ketoacidosis (DKA). Bicarbonate has been reported to cause a decrease in cerebrospinal fluid pH, depress serum potassium, impair 2, 3-DPG dissociation, cause rebound alkalosis, and cause sodium overload.<sup>1, 2</sup>

Conflicting arguments are that sodium bicarbonate does not adversely affect oxygen transport,<sup>3</sup> that the pH of cerebrospinal fluid of patients treated with sodium bicarbonate is no different from those not treated,<sup>4</sup> and that the causes of death in ketoacidosis may be directly related to severe acidosis.<sup>5</sup>

Our own clinical impression that patients treated with sodium bicarbonate recovered more quickly and with fewer sequelae prompted us to review the records of all juvenile diabetics admitted to The Children's Memorial Hospital during a 23-year period. The purpose of this retrospective study was to answer the question: Does treatment with sodium bicarbonate enhance or adversely affect the treatment of diabetic ketoacidosis?

### Methods

All 1176 admissions of 279 diabetic children to this hospital from 1950 to 1973 were retrospectively reviewed. Of these patients, 40.6 per cent were males and 59.4 per cent were females. Age, sex, date of onset, family history, accompanying illnesses, signs, symptoms, duration of symptoms; serum electrolytes, BUN, glucose, CO<sub>2</sub>; duration of acidosis after onset of treatment, duration of hospital stay, therapy (comparison of normal saline to bicarbonate to Ringer's lactate to other therapy), and outcome were recorded. Details of our method of treatment of DKA utilizing high-dose, intermittent, subcutaneous insulin has been described in detail.<sup>6</sup>

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**Controversy regarding the use of sodium bicarbonate in the treatment of diabetic ketoacidosis prompted a 23-year retrospective study of juvenile diabetics. The results indicate that such therapy has neither a positive nor a negative effect on diabetic children with ketoacidosis.**

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The results were then analyzed with the help of personnel of the Vogelback Computer Center at Northwestern University. An analysis of covariants was made with thirteen covariants: CO<sub>2</sub>, potassium, glucose, weight loss, lethargy, coma, anorexia, nausea and vomiting, duration of symptoms, responsiveness, dehydration, Kussmaul respirations, and age. Further statistical data and methods are available.

Of the 279 diabetic children, 131 had 392 episodes of DKA. A single randomized episode of DKA was chosen for each patient, and for which abnormal serum potassium, CO<sub>2</sub>, glucose, and age were known. For DKA analysis it was required that the acidosis duration be known. These cases formed the files that were analyzed for hospital stay and acidosis.

The analysis of covariance model used was:

$$E(y_{ij}) = M + \alpha_i + \sum^m \gamma_k t_{ijk}$$

where  $\Sigma = 0_1 y_{ij}$  was the uncorrected and jointly normal with equal variance.  $M$  is the overall average and  $\alpha_i$  are differential treatment effects.  $Y_{ij}$  is the observation of the  $j^{\text{th}}$  person in the  $i^{\text{th}}$  group.

The least squares estimates are

$$\hat{M} = \bar{Y}_i - \sum \hat{\gamma}_k t_{1n}, \hat{\alpha}_i = \bar{Y}_i - \bar{Y} \dots - \sum \hat{\gamma}_k (\bar{t} \dots k - \bar{t} \dots k)$$

where

$$\bar{Y} \dots = \frac{1}{6} \sum \bar{y}_n \text{ and } \bar{t} \dots k = \frac{1}{6} \sum_{n=1}^6 t_1 \dots k$$

weighted averages of the  $Y_{ij}$ s and  $t_{ijk}$ s. The hypotheses tested were

TABLE I  
SUMMARY OF DKA THERAPY

Treatment Group	Number of Patients	Age (Yrs)	% Patients w/ Dehydration	% Patients w/ Semi-Coma or Coma	Glucose mgs (dl)	Potassium (mEq/l)	CO <sub>2</sub> (mEq/l)
1	37	10.52 ± 4.57	81.1 ± 39.7	18.9 ± 39.7	529 ± 207	4.85 ± .723	7.60 ± 2.40
2	41	8.97 ± 4.42	83.9 ± 38.1	14.6 ± 35.8	454 ± 193	4.55 ± .690	9.35 ± 3.05
3	33	10.88 ± 4.33	78.8 ± 41.5	9.09 ± 2.92	464 ± 171	4.84 ± .748	8.57 ± 2.91
4	8	9.27 ± 4.88	100 ± 0	62.5 ± 51.8	588 ± 300	4.73 ± .544	8.03 ± 3.48
5	12	8.49 ± 4.61	27.3 ± 46.7	0	311 ± 119	4.23 ± .777	11.7 ± 3.11

1. Sodium bicarbonate or sodium bicarbonate and saline

2. Lactate Ringers or Lactate Ringers w/ saline

3. Saline

4. Sodium bicarbonate and Saline and Lactate Ringers or sodium bicarbonate and Lactate Ringers

5. Other

Data are expressed as mean ± 1 S.D.

- (1) all  $\alpha_1$  equal
- (2)  $\alpha_1 = 0$  for 1, ..., 6
- (3)  $\alpha_1 - \alpha_j = 0$ ,  $i + j$

## Results

Records of 131 patients who had at least one episode of diabetic ketoacidosis were analyzed (Table I). There was one death — an incidence of 0.6 per cent. This death was not directly attributable to the diabetes or ketoacidosis; this child had cystic fibrosis and severe pulmonary disease. There was no significant difference in hospital stay for covariance in any of the treatment groups. There also was no significant difference in duration in acidosis or outcome when covariant analysis was performed. The five treatment groups were as follows: (1) Sodium bicarbonate or sodium bicarbonate and saline; (2) Lactate-Ringer's or Lactate-Ringer's with saline; (3) Saline; (4) Sodium bicarbonate and saline and Lactate-Ringer's or sodium bicarbonate and Lactate-Ringer's; or (5) Other. Therapy did not change the duration of the hospital stay or the duration of acidosis. In analyzing each treatment group there was no significant difference in duration of hospital stay (Table II).

The group of patients treated with sodium bicarbonate had fewer hours of acidosis but only with a 0.08 level of significance.

Even though there were significant differences in the make-up of the bicarbonate treatment group compared to the other groups (the CO<sub>2</sub> was lower, the glucose was higher), there was no significant degree of difference in outcome in any of the groups when analysis of covariance was performed.

## Discussion

Several series with differing results for the treatment of DKA have been reported for insulin dependent diabetics. Soler *et al.* reviewed 258 cases with a 6.2 per cent mortality rate in an adult population.<sup>7</sup> Poor outcome of their patients was correlated with a CO<sub>2</sub> less than 10mEq/l. Asfeldt's 119 adult patients had a 6.7 per cent mortality rate, and no correlation between degree of acidosis and mortality was found.<sup>8</sup> Beigelman reviewed 340 episodes of acidosis in 1257 patients with a mortality rate of 8.03 per cent.<sup>9</sup> Clements and Vourganti found that 14 per cent of diabetic admissions were due to diabetic ketoacidosis.<sup>10</sup>

Only two large pediatric surveys have been reported. Krumlik and Ehrlich reported 44 acidotic episodes in 27 patients and had no complications.<sup>11</sup> Kogut had a 0.2 per cent mortality rate in the 1500 patients he treated.<sup>12</sup>

This report includes 131 juvenile diabetics, each of whom had at least one episode of DKA. Because

TABLE II

	Duration of Acidosis (hrs)	Hospital Stay (days)
Group 1	11.57 ± 6.77	8.55 ± 3.91
2	14.54 ± 6.58	6.56 ± 4.20
3	14.67 ± 7.71	7.13 ± 5.88
4	13.38 ± 5.60	8.61 ± 6.33
5	11.36 ± 6.74	6.00 ± 3.67
Mean of All	11.36 ± 6.74	7.37 ± 4.79



of the long time interval (1950-1973), several different modes of therapy with different fluid regimens could be compared. The use of insulin during this time period did not change appreciably. The degree of severity of each patient was weighed and an analysis of covariance made.

It must be acknowledged that the method of measurement of plasma bicarbonate at levels below 7-10 mEq/l is imprecise, and arterial blood pH is a better method for assessing acidosis. However, we did not have this latter measurement for our patients in this retrospective study.

Our clinical impressions were not supported. Therapy with sodium bicarbonate did not affect the short (duration of acidosis) or relatively long (length of hospital stay) term outlook. Of note is that no patient died of diabetic ketoacidosis or as a consequence of diabetes. Also, those treated with sodium bicarbonate did not do worse than those not treated with bicarbonate.

From this study we conclude that, although there were no adverse effects noted with sodium bicarbonate therapy, there also was no proven benefit from its use. We still recommend small amounts of sodium bicarbonate in those patients with severe DKA where the  $\text{CO}_2$  is less than 5 mEq/l or where the pH is less than 7.0 to help eliminate the immediate danger of cardiac arrhythmia due to the metabolic acidosis, until hydration and insulin affect the ketogenesis.

## Summary

During a 23-year period, 131 patients with at least one episode of DKA were reviewed to examine the effect of sodium bicarbonate therapy. Treatment did not affect duration of acidosis or length of hospital stay. There were no adverse effects of the bicarbonate therapy.

## References

1. Kaye, R.: Diabetic ketoacidosis — the bicarbonate controversy. *J. Pediatr.* 87:159, 1975.
2. Alberti, K. G. M. and Hockaday, T. D. R.: Diabetic coma: Reappraisal after five years. *Clin. Endocrinol. Metabol.* 6:421-455, 1977.
3. Munk, P. *et al.*: Effect of bicarbonate on oxygen transport in juvenile diabetic ketoacidosis. *J. Pediatr.* 84:510-514, 1974.
4. Kreisberg, R. A.: Diabetic ketoacidosis: New concepts and trends in pathogenesis and treatment. *Ann. Intern. Med.* 88:681-695, 1978.
5. Felig, P.: Diabetic ketoacidosis. *N. Engl. J. Med.* 24:1360-1364, 1974.
6. Traisman, H. S.: *The Management of Juvenile Diabetes Mellitus*, Second Edition. St. Louis, C. V. Mosby, pp. 29-38, 1971.
7. Soler, N. *et al.*: Intensive care in the management of diabetic ketoacidosis. *Lancet* 1:951-953, 1973.
8. Asfeldt, V.: Ketoacidosis Diabetica. *Dan. Med. Bull.* 12:103-111, 1965.
9. Beigelman, P.: Severe diabetic ketoacidosis: 482 episodes in 257 patients. *Diabetes* 20:490-500, 1971.
10. Clements, R. and Vourganti, B.: Fatal diabetic ketoacidosis: Major causes and approaches to their prevention. *Diabetes Care* 5:314-325, 1978.
11. Krumlik, J. and Ehrlich, R.: Insulin and sodium bicarbonate therapy of diabetic acidosis, a retrospective review. *J. Pediatr.* 83:268-271, 1973.
12. Kogut, M.: Pathogenesis, diagnosis, and therapy of diabetic ketoacidosis. *Current Problems in Pediatrics* VI, Feb. 1976.

## The Ischemic Extremity

(Continued from page 277)

graft occlusion and patients who develop subsequent ischemia after vascular reconstruction will be reviewed in the July issue of the *Journal*.

## References

1. Jummel, B. W. *et al.*: Reactive hyperemia vs treadmill exercise testing in arterial disease. *Arch. Surg.* 113:95, 1978.
2. Van de Water, J. M. *et al.*: Limb salvage and selectivity. *Surg. Gynecol. Obstet.* 148:349, 1979.
3. Myers, K. A. *et al.*: Surgical treatment of the severely ischemic leg. *Br. J. Surg.* 65:779, 1978.
4. McCombs, P. R.: The pathophysiologic characteristics of superficial femoral artery disease. *Surg. Gynecol. Obstet.* 148:775, 1979.
5. Hight, B. W. *et al.*: Changing clinical trends in patients with peripheral arterial emboli. *Surgery* 79:172, 1976.
6. Satiani, B. *et al.*: Limb salvage after embolectomy. *Ann. Surg.* 188:153, 1978.
7. Plecha, F. R. and Pories, W. J.: Intraoperative angiography and immediate assessment of arterial reconstruction. *Arch. Surg.* 105:902, 1972.
8. Martin, Peter *et al.*: On the surgery of atherosclerosis of the profunda femoris artery. *Surgery* 71:182, 1972.
9. Szilagy, D. E. *et al.*: Autogenous vein grafting in femoropopliteal atherosclerosis: The limits of its effectiveness. *Surgery* 86:836, 1979.
10. Tyson, R. R. and Reichle, F. A.: Femoral tibial bypass. *Ann. Surg.* 170:429, 1969.
11. Symposium: Tibial peroneal arterial reconstruction. *Contemp. Surg.* 14:83, 1979.
12. McDonald, P. T. *et al.*: Femorofemoral grafts: The role of concomitant extended profundoplasty. *Am. J. Surg.* 136:622, 1978.
13. Shin, C. S. *et al.*: Hemodynamics of extra-anatomic bypass grafts. *Surg. Gynecol. Obstet.* 148:567, 1979.
14. O'Rourke, D. A. and Hede, J. E.: Reversible leg ischemia due to diuretics. *Br. Med. J.* 1:114, 1978.
15. Towne, J. B. *et al.*: White clot syndrome. *Arch. Surg.* 114:372, 1979.
16. Szczeklik, A. *et al.*: Successful therapy of advanced arteriosclerosis obliterans with prostacyclin. *Lancet* 1:1111, 1979.
17. Blaisdell, F. W. *et al.*: Management of acute lower extremity arterial ischemia due to embolism and thrombosis. *Surgery* 84:822, 1978.
18. Karmody, A. M. *et al.*: Blue toe syndrome. *Arch. Surg.* 111:1263, 1976.

# Vitamin B<sub>12</sub> Absorption

## *A Correctable Intestinal Defect in Pernicious Anemia*

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MEGALOBlastic anemia in most patients can be attributed to the deficiency of folic acid or vitamin B<sub>12</sub>. Most commonly the deficiency is due to poor dietary intake. Pernicious anemia and malabsorption of vitamin B<sub>12</sub> are two major causes of vitamin B<sub>12</sub> deficiency. The Schilling test — with and without intrinsic factor (IF) — usually enables differentiation between these two entities. Patients with pernicious anemia characteristically show a subnormal gastrointestinal absorption of cyanocobalamin-<sup>57</sup>Co, which is corrected by addition of IF, whereas patients with small intestinal disease have defective absorption of the vitamin even in the presence of intrinsic factor. In a few cases of pernicious anemia, absorption abnormalities of the small intestine may be induced by vitamin B<sub>12</sub> deficiency, and the therapy with vitamin B<sub>12</sub> can restore absorption of B<sub>12</sub>-IF complex.<sup>1-5</sup> One such case is reported here.

### Case Report

A 58-year-old white male was admitted to the hospital on February 7, 1978, with a history of feeling weak, tired, and increasingly light-headed during a four to five month period prior to admission. In January 1978, he had been evaluated elsewhere and was found to have macrocytic anemia. On January 31, 1978, part I of the Schilling test revealed less than 1 per cent of cyanocobalamin-<sup>57</sup>Co excretion in 24-hour urine collection (normal 7%). He was also known to have had diet-controlled diabetes mellitus since January, 1978.

Physical examination revealed a well-built, somewhat obese Caucasian male in no acute distress. Blood pressure was 150/86 mmHg, and there was slight pallor of the conjunctivae.

Laboratory data included: hemoglobin, 11.7 gm/

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**A case is reported of a patient with pernicious anemia. Correction of a malabsorption defect with vitamin B<sub>12</sub>-intrinsic factor complex was achieved with parenteral vitamin B<sub>12</sub> therapy.**

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dl; hematocrit, 33.5%; mean corpuscular volume, 105 cubic microns; white cell count, 6,600/ $\mu$ l with a differential count of 2% band forms, 64% segmented neutrophils, 19% lymphocytes, 6% eosinophils, 1% basophils, and 8% monocytes; reticulocyte count, 9.4% (he had received 1,000 mcg vitamin B<sub>12</sub> as part of the Schilling test, part I, on January 31, 1978). Serum B<sub>12</sub> concentration was 465 pg/ml (normal range 200-900 pg/ml). Serum folic acid was 6.9 ng/ml; urinalysis was unremarkable. Fasting blood sugar was 134 mg/dl and lactate dehydrogenase was 334 IU/l. Part II of the Schilling test on March 1, 1978, revealed 3.3% of cyanocobalamin-<sup>57</sup>Co excretion in 24-hour urine collection. There was histamine-fast achlorhydria with no intrinsic factor in the gastric juice. Serum gastrin concentration, fasting, was 850 pg/ml; serum gastric parietal cell antibody was negative. Serum intrinsic factor antibody was also negative. Serum vitamin A level was 56 mcg/dl (normal range 20-80 mcg/dl). D-xylose absorption was normal. Biopsy of the gastric mucosa revealed atrophic gastritis. Upper gastrointestinal and small bowel series were normal. Serum protein electrophoresis and serum protein immunoelectrophoresis were normal.

He was treated with 1,800 calorie diabetic diet with satisfactory control of diabetes. He received 1,000 mcg of vitamin B<sub>12</sub> as part of Schilling test part II on March 1, 1978, and there was subsequent improvement in anemia. He was discharged from the hospital on March 3. Vitamin B<sub>12</sub> injections, 1,000 mcg intramuscularly/month, were prescribed. Schilling test part II was repeated on September 20, 1978. He also had a repeat Schilling test part I on April 10, 1979. Course of his blood counts and results of the Schilling-tests are shown in *Table 1*.

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TABLE I  
COURSE OF BLOOD COUNTS AND RESULTS OF SCHILLING TESTS

Date	RBC × 10 <sup>6</sup>	Hgb Gm/dl	Hct %	MCV μ <sup>3</sup>	Retics %	24-Hr Urine Radioactivity* Schilling Test	
						Part I % of dose	Part II % of dose
8-1-69†	5.3	15	45	83	—	—	—
1-2-78	2.76	10.4	33.4	120	—	—	—
1-31-78	—	—	—	—	—	<1	—
2-8-78	3.37	11.7	35.5	105	9.4	—	—
3-1-78	4.14	13.3	38.2	93	4.3	—	3.3
9-20-78	5.3	16	45.4	84	—	—	17
4-10-79	5.3	15.3	43.6	83	—	<1	—

\* 1,000 μg of vitamin B<sub>12</sub> given parenterally with each urine radioactivity study.

† From old records.

## Discussion

Clinical manifestations of pernicious anemia include megaloblastic anemia and depressed gastric parietal cell function, as evidenced by achlorhydria after histamine stimulation and decreased vitamin B<sub>12</sub> absorption in the first part of the Schilling test with correction by oral IF in the second part. Serum vitamin B<sub>12</sub> assay and the Schilling test are employed respectively to confirm B<sub>12</sub> and IF deficiency. The first or second part of the Schilling test involves administration of 1,000 mcg. of vitamin B<sub>12</sub>. This results in rapid rise of serum B<sub>12</sub> level, disappearance of megaloblastic changes in the bone marrow, with reticulocyte crisis by the fourth or fifth day and remission of the anemia in a matter of weeks. Once the Schilling test is run, serum B<sub>12</sub> assay and bone marrow studies are no longer helpful in the diagnosis of pernicious anemia. However, the Schilling test can be performed any time, even after full repletion of vitamin B<sub>12</sub> deficiency and correction of anemia, and IF deficiency — if present — will still be present.<sup>6</sup> However, spurious Schilling test results may be obtained with IF enclosed in capsules.<sup>7</sup>

In the majority of patients with pernicious anemia, the second part of the Schilling test is of diagnostic value. However, several case reports indicate the presence of malabsorption of vitamin B<sub>12</sub>-IF complex due to alterations in the small intestinal mucosa as a consequence of B<sub>12</sub> deficiency.<sup>1-5</sup> Therapy with vitamin B<sub>12</sub> has restored absorption of B<sub>12</sub>-IF complex in such cases. Duration of therapy required to restore the second part of the Schilling test to normal could be as short as one to two weeks,<sup>5</sup> or as long as 22 months.<sup>4</sup>

In patients with pernicious anemia, fasting plasma gastrin concentrations are markedly elevated in about 75 per cent,<sup>8</sup> and serum autoantibodies to gastric parietal cell cytoplasm are found in about 90 per cent.<sup>6</sup> Similar antibodies may be found in about 50 per cent of patients with atrophic gastritis without pernicious anemia. Antibodies to IF are detected less frequently, but are more specific since, with very few exceptions, they have been found only in pernicious anemia patients.<sup>9</sup> Antibody to a complex of IF and vitamin B<sub>12</sub> may occur in gastric juice of some patients with pernicious anemia. This antibody inhibits the absorption of vitamin B<sub>12</sub>, mediated by IF.<sup>10</sup> Antibodies to IF or parietal cells, or both, may occur initially or several months or years post-treatment.<sup>4</sup>

In the patient presented in this case report, the first part of the Schilling test on January 31, 1978, revealed less than 1 per cent absorption of the administered dose of cyanocobalamin-<sup>57</sup>Co. The second part of the Schilling test on March 1 revealed only 3.3 per cent absorption of the administered dose of cyanocobalamin-<sup>57</sup>Co. However, repeat study of the second part of the Schilling test approximately seven months later showed 17 per cent absorption. Impaired absorption of vitamin B<sub>12</sub>-IF complex in earlier studies is unlikely to be due to spurious Schilling test, since all Schilling tests were performed by mixing IF and cyanocobalamin-<sup>57</sup>Co in water before administration. It is conceivable that the absorption of vitamin B<sub>12</sub>-IF could have improved in less than seven months, but since the repeat Schilling test part II was not performed earlier, the exact time of restoration of IF-B<sub>12</sub> complex absorption could not be

(Continued on page 302)

# Percutaneous Liver Biopsy

## *A Safe Outpatient Procedure*

ALI SHADCHEHR, M.D., *Leavenworth*

PERCUTANEOUS needle biopsy of the liver has been considered to be a useful tool in the diagnosis of various types of liver disease. Although the mortality rate with this procedure is very low, morbidity has been reported to be appreciable,<sup>1-3</sup> and in order to minimize that, adherence to conventional protocol has been recommended. This includes 24-48-hour bed rest and evaluation of hemoglobin and hematocrit at six and 24 hours post-procedure.

Recently, some doubt has been cast on the necessity for strict adherence to this protocol by some investigators,<sup>4-5</sup> who have shown percutaneous needle biopsy of the liver might be done safely as an outpatient procedure.

In institutions like ours, the patients are not concerned about hospital costs; however, time is important to our patients who are active in society. Therefore, we became interested in examining the safety of liver biopsy as an outpatient procedure in our institution.

### Materials and Method

Percutaneous needle biopsy of the liver was done in 95 inpatients with various liver pathologies (*Table I*). Post-biopsy followup was carried out in a setting similar to outpatient basis. The procedure was as described previously.<sup>6</sup> Post-procedure followup of these patients was as follows:

Immediately after the procedure, patients were positioned on their right sides at complete bed rest for two hours. During the third hour, they were kept in bed in their desired position. During this hour all ate lunch. Vital signs were checked every 15 minutes for four times; if stable, then every 30 minutes for four times; then, if stable after completion of three hours in bed, all the patients were encouraged to move out of bed and move around the hospital freely — walking down stairs, going to the cafeteria, and resuming their physical activities more or less similar to their daily routine. However, hard physical effort, such as heavy lifting, was discouraged for

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**Ninety-five inpatients with various liver pathologies underwent percutaneous needle biopsy utilizing a post-procedure mechanism similar to an outpatient orientation. Evaluation of the results indicates that the procedure is safe for selected patients on outpatient basis, thereby saving patients' time and cutting hospital costs.**

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24 hours following the procedure. During the next 24 hours they were closely followed by the nurse, and vital signs were checked and recorded every four hours. All patients complied fully with this program.

All of our patients were males between 20 and 88 years (mean age 55). None of the patients was premedicated. The blood tests done before the procedure were prothrombin time (PT), partial thromboplastin time (PTT), and complete blood count (CBC). Intravenous bleeding time was checked only in those patients with a history of aspirin ingestion during the seven days prior to the procedure, bleeding history, or family history of abnormal bleeding. Patients with PT and PTT more than 4 seconds above control and hemoglobin below 9.5 gm/100 ml were excluded. Typing and crossmatching and platelet count were not done in these patients. Five of these patients had minimal ascites. However, moderate

TABLE I

<i>Pathological Finding</i>	<i>Number of Patients</i>
Cirrhosis of the liver	35
Alcoholic fatty degeneration	16
Chronic active hepatitis	11
Acute alcoholic hepatitis	5
Granulomatous infiltration of the liver	2
Post-necrotic cirrhosis	3
Chronic hepatitis, nonspecific	2
No specific pathological finding	2
Metastatic carcinoma of the liver	6
Pericholangitis	1
Acute viral hepatitis	6
Chronic passive congestion of the liver	6

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ascites, septic conditions, fever, and deep jaundice were considered as contraindications to biopsy.

All biopsies were done by one staff gastroenterologist. The Menghini needle was used in 19 patients, and Tru-Cut (20 mm biopsy notch) was used in 76 patients. Number of attempts was one in 69 patients, and two in 26 patients.

## Results

The only complication we noted was mild to moderate pain in the right side of the chest, radiating to the shoulder, aggravated by deep breaths. This complaint was recorded in 25 patients (24%). However, in seven patients (6.6%) the pain was bothersome enough to require analgesics. In the latter group, two patients received Darvocet-N 100, one or two capsules; one patient received one shot of 30 mg Talwin; and four patients received one shot each of Demerol, 50 mg intramuscularly. However, in all patients who experienced pain, this occurred within the first 30 minutes following the procedure, and all were asymptomatic in the third hour post-procedure, to the extent that all volunteered to move out of bed and resume activities.

All of our patients were in fairly good physical condition.

## Discussion

Hospitalization for percutaneous needle biopsy of the liver, as it is practiced in most institutions, is costly and time-consuming. We evaluated the practicability and safety of percutaneous liver biopsy as an outpatient procedure in 95 inpatients in our institution by providing a post-procedure setting quite comparable to outpatient conditions. Therefore, while patients were in the hospital and a close 48-hour post-procedure followup could be carried out with no difficulty or risk, the practicability of liver biopsy as an outpatient procedure could be examined.

From this experience, we have concluded that: (1) Percutaneous liver biopsy may be done safely in a selected group of patients as an outpatient procedure, thereby saving the patient's time and significantly curtailing the hospital costs; (2) In these 95 patients, we have noted no major complications. Mild to moderate pain — all of which occurred within the first hour post-procedure — responded to mild doses of analgesics. Interestingly, four out of seven patients who suffered moderate pain requiring analgesics were among those patients who had two attempts for biopsies, which may imply that there is a strong correlation between the complications of the

liver biopsy and the number of attempts; (3) We have used a Tru-Cut needle in 80 per cent of our patients. Therefore, in our hands, the safety of the Tru-Cut needle was as good as the Menghini needle.

## References

1. Zamcheck, N. and Klausenstock, O.: Needle biopsy of the liver — Risk of needle biopsy. *N. Engl. J. Med.* 249:1062-1069, 1953.
2. Terry, R.: Risks of needle biopsy of the liver. *Br. Med. J.* 1:1102-1105, 1952.
3. Wilbur, R. D. and Foulk, W. T.: Percutaneous liver biopsy, *JAMA* 202:147-149, 1967.
4. Knauer, C. Michael: Percutaneous biopsy of the liver as a procedure for outpatients. *Gastroenterology* 74:101-102, 1978.
5. Perrault, Jean: Liver biopsy — Complications in 1,000 inpatients and outpatients. *Gastroenterology* 74:103-106, 1978.
6. Shiff, Leon: *Disease of the Liver*, Fourth Edition, Philadelphia, J. B. Lippincott Co., 1975.

## Outpatient Pain Clinic

(Continued from page 294)

each patient is instructed to return to his/her primary physician.

The pain clinic is open two days per week, and one attending physician devotes the entire day to chronic pain patient care. Each patient is seen by the same physician at each visit. This appears to improve the physician-patient relationship which is particularly important to the pain patient. Although further improvements are needed in the future, it appears that many patients are helped during a short period of time in a cost-effective manner.

## References

1. Wang, Josef K. *et al.*: Outpatient pain clinic: A long-term followup study. *Minn. Med.* (in press).
2. Bonica, J. J.: Organization and function of a pain clinic. *Adv. Neurol.* 4:433-443, 1974.
3. Merskey H.: The role of the psychiatrist in the investigation and treatment of pain. *Res. Publ. Assoc. Res. Nerv. Ment. Dis.* 58:249-260, 1980.
4. Huskesson, E. C.: Measurement of pain. *Lancet* 2:1127-1131, 1974.
5. Berthold, Walt B.: Measurement of human pain. *Pain*. Raven Press, pp. 173-184, 1980.
6. Fordyce, Wilbert E.: The office management of chronic pain: Learning factors. *Minn. Med.* 57:185-188, 1974.
7. Bonica, J. J.: *Important Clinical Aspects of Acute and Chronic Pain, Mechanism of Pain and Analgesic Compounds*. Raven Press, pp. 15-29, 1979.

# Anemia of Hypothyroidism

## *Clinical Response to Thyroxine Therapy*

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DEFICIENCY of hormones required for stimulation of the erythropoietic system can cause anemia. Most commonly thyroid, adrenal, pituitary, and reproductive glands are implicated. These hormones can affect oxygen tension, the precursors of the red blood cell, or erythropoietic function.<sup>1</sup>

Late in the nineteenth century, the correlation between myxedema and anemia was recognized.<sup>1, 2</sup> According to various authors, the incidence of anemia associated with hypothyroidism is in the range of 50-70 per cent.<sup>2, 3</sup> Three morphologically separate types of anemia have been associated with hypothyroidism: (1) normochromic, normocytic; (2) hypochromic, microcytic; and (3) normochromic, macrocytic. It has been possible to separate the causative factors of these entities in hypothyroid patients by further investigation of the concurrent deficiencies of iron, folate, and vitamin B<sub>12</sub>.

Uncomplicated anemia secondary only to hypothyroidism is generally normochromic and normocytic, and the hemoglobin is rarely less than 9 gm/100 ml.<sup>1, 4</sup> The following case report is typical of such an anemia.

### Case Report

An 84-year-old white female with a prior history of cholecystitis presented with a chief complaint of sharp right upper quadrant pain. In addition she had noticed sensitivity to cold, profound weakness, chest pain (relieved by nitroglycerin), and shortness of breath.

Initial physical examination revealed a pale, extremely obese female with an oral temperature, 36.4C; pulse, 90 beats/min; respirations, 20/min; and blood pressure, 110/50 mmHg. Significant findings on physical examination included scleral icterus, atrophic lingual papillae, diminished peripheral pulses, a 12 cm liver span palpable only on inspiration with a positive Murphy's sign, deep tendon reflexes of  $\frac{12+}{4+}$  with a slightly depressed reaction

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**A patient admitted because of recurring cholecystitis was found to have a significant anemia. A relationship to hypothyroidism was indicated, and treatment of the hypothyroidism quickly corrected the anemia also. Anemias and differential diagnoses are discussed.**

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time, and decreased muscle strength most notable in the lower extremities. Other neurological findings were within normal limits. There was no evidence of thyromegaly, splenomegaly, petechiae, purpura, or pedal edema.

Relevant laboratory data included (normal values in parentheses): WBC, 27,000 cells/cu mm with 96% neutrophils and bands; hemoglobin, 9.7 gm/dl; hematocrit, 31.1%; uncorrected reticulocyte count, 4.8%; lactate dehydrogenase, 58 IU/ml (22-60); SGOT, 16 IU/ml (8-31); alkaline phosphatase, 36 U/dl (12-43); total bilirubin, 7.0 mg/dl; direct bilirubin, 4.0 mg/dl; amylase, 24 units/dl (0-160); T<sub>3</sub>, 30.4% (22-34%); T<sub>4</sub>, 1.8 ng/dl (5-13 µg/dl); T<sub>7</sub>, 0.55 (1.1-4.42); thyroid-stimulating hormone, 7 µIU/ml (0-5); partial thromboplastin time and protime were within normal limits. Chest x-ray revealed mild cardiomegaly without evidence of pleural effusion.

Investigation into the cause of the patient's anemia revealed a mean corpuscular volume, 99 µm<sup>3</sup>, macrocytosis and occasional hypersegmented neutrophils; vitamin B<sub>12</sub>, 306 pg/ml (200-800), and folate, 7.8 ng/ml (4-20). The serum iron was 20 µg/dl (57-194); the total iron binding capacity, 261 µg/dl (200-366 µg/dl); and saturation 8% (25-47). There were no megaloblastic changes on bone marrow examination, and an increased amount of stainable iron was present.

The patient was treated with L-thyroxine 0.05 mg/day as an initial dose. Four days later her hemoglobin was 11.2 g/dl and hematocrit, 34.9%, with an uncorrected reticulocyte count of 7.5%. Three weeks later her hemoglobin was 13.4 g/dl and hematocrit, 42.1%.

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## Discussion

This patient was admitted for recurrence of cholecystitis. A fortuitous incidental finding was anemia, which was investigated. Among the differential diagnoses, several could be ruled out early. Isolated hemolytic anemia was considered, but eliminated by a reticulocyte index of 1.4%. In addition, there was a negative direct Coombs, normal lactate dehydrogenase, lack of splenomegaly and poikilocytosis. Nutritional causes for anemia with macrocytosis were unlikely with normal B<sub>12</sub> and folate levels. Iron deficiency was ruled out when the bone marrow revealed an amount of stainable iron.

Experiments with thyroidectomized animals have revealed a decrease in red cell production resulting in a normochromic normocytic anemia. The bone marrow is typically normocellular, but may be mildly hypocellular.<sup>4, 5</sup> Once a thyroid extract — T<sub>3</sub> or T<sub>4</sub> — is administered to these animals, red cell production is increased and the hemoglobin returns to normal levels. In humans, this usually requires one to four months following the institution of thyroxine therapy.<sup>5</sup>

There seems to be general agreement that the red blood cell (RBC) survival and utilization of iron are normal in hypothyroid patients.<sup>5, 6</sup> These patients often have diminished plasma volumes as well as lowered RBC volumes; consequently, the degree of anemia is not an indicator of the severity of thyroid deficiency. The plasma volume is replaced more quickly (within two weeks) than the RBC volume, often resulting in an aggravated state of anemia prior to the return of the RBC count to normal.<sup>2, 3, 5-7</sup>

There is some debate concerning the pathophysiology of the anemia. Traditionally the accepted theory is the Bomford hypothesis in which the cellular oxygen requirements determine the need for hemoglobin and these oxygen requirements are regulated in part by changes in thyroid hormone concentration.<sup>8</sup> However, experiments by Muldowney, Crooks, and Wayne have demonstrated that increasing oxygen consumption by administration of dinitrophenol resulted in an increase in the RBC volume without a change in thyroid activity.<sup>7</sup> In response to this information, other theories concerning the relationship of thyroid deficiency and anemia have surfaced. These include thyroid hormones functioning as: (1) a direct stimulant of bone marrow oxygen consumption; (2) an erythroid maturation factor; (3) a hemovolume regulator; and (4) a link with erythropoietin.<sup>3, 9, 10</sup>

Hypochromic, microcytic anemia is not an un-

common finding in hypothyroid patients, but the exact incidence is in dispute.<sup>2, 8, 11</sup> The cause, however, has been well documented as an iron deficiency anemia with various causes: histamine refractory achlorhydria; intestinal malabsorption; disturbed protein metabolism (including transferrin and hemoglobin); and most commonly menorrhagia, frequently seen in hypothyroid females.<sup>1-3, 6, 10</sup> Tudhope and Wilson thoroughly investigated these hypochromic microcytic hypothyroid patients and have demonstrated that with iron therapy alone, the hemoglobin concentration rapidly increased although the patients remained hypothyroid. Another group of patients treated with thyroxine alone retained their hypochromic microcytic anemia even in the euthyroid state. The addition of iron to thyroxine therapy in this group resulted in resolution of the anemia.<sup>5</sup>

Macrocytic, normochromic anemia associated with hypothyroidism is even less well-defined. An elevated mean corpuscular volume in hypothyroid patients is found to be about 10 per cent.<sup>3, 5, 10, 12</sup> This has been associated with B<sub>12</sub> deficiency and uncomplicated hypothyroidism. Some studies have demonstrated an unusually high incidence of pernicious anemia in hypothyroidism and response of this anemia solely to vitamin B<sub>12</sub> administration.<sup>5</sup> Other investigators claim that macrocytosis does not necessarily indicate the coexistence of vitamin B<sub>12</sub> deficiency. One study revealed that two-thirds of anemic hypothyroid patients had macrocytosis that responded to thyroxine therapy alone.<sup>10</sup> Nevertheless, the incidence of pernicious anemia in hypothyroid patients seems to be higher than that of the general population. There is no apparent cause and effect relationship between hypothyroidism and B<sub>12</sub> malabsorption.<sup>13</sup> However, their concurrent presence has led to speculation that crossreactions may be involved between anti-thyroid, intrinsic factor, and parietal cell antibodies.<sup>13</sup>

Generally, the anemia of hypothyroidism is a mild normochromic, normocytic anemia which responds to thyroxine therapy alone in a period of one to four months. Coexistence of iron deficiency anemia is the cause of a microcytic hypochromic anemia in hypothyroid patients, and treatment includes both thyroxine and iron. Macrocytic normochromic anemia in hypothyroidism can be associated with pernicious anemia, but this is not invariably true, and the patient must be investigated for vitamin B<sub>12</sub> deficiency and treated accordingly.

Investigation of this patient's anemia revealed a macrocytic normochromic anemia and a low serum

iron. Alone, these facts presented a confusing picture. However, normal vitamin B<sub>12</sub> and folate levels drawn on admission to the hospital with the absence of megaloblastic morphology in the bone marrow were convincing evidence that B<sub>12</sub> and folate deficiency were not the cause of the anemia. The diagnosis of iron deficiency anemia based on depressed serum iron would have resulted in a deleterious iron accumulation after iron therapy, and a lack of resolution of the anemia. The low iron saturation, lack of elevation of the iron binding capacity, and increased marrow iron pointed toward an anemia secondary to chronic disease or the lack of an essential hormone such as thyroxine. A thyroid stimulating hormone level of 7  $\mu$ U/ml is consistent with the diagnosis of primary thyroid failure. The possibility of pituitary failure was not investigated by thyroid releasing hormone infusion or pituitary sella turcica roentgens during this hospitalization. Although it is preferable to document a thyroid-stimulating hormone greater than 10  $\mu$ IU/ml (0-5) in primary hypothyroidism, a level of 7  $\mu$ U/ml is clearly abnormal and consistent with the diagnosis. Rapid clinical response of the anemia to institution of thyroxine emphasizes the importance of considering endocrine failure in the anemic patient.

## References

1. Erslev, Allen J.: Anemia of endocrine disorders, *Hematol-*

*ogy*, 2nd Edition, (Williams, William J., ed.). New York, McGraw-Hill, p. 295, 1977.

2. Larsson, S. D.: Anemia and iron metabolism in hypothyroidism. *Acta Med. Scand.* 157:349, 1967.

3. Hines, J. D.; Halstead, C. H.; Griggs, R. C. and Harris, J. W.: Megaloblastic anemia secondary to folate deficiency associated with hypothyroidism. *Ann. Intern. Med.* 68:792, 1968.

4. Axelrod, A. R. and Berman, L.: The bone marrow in hyperthyroidism and hypothyroidism. *Blood* 6:436, 1951.

5. Tudhope, G. R. and Wilson, G. M.: Anemia in hypothyroidism incidence, pathogenesis and response to treatment. *Q. J. Med.* 29:513, 1960.

6. Kiely, J. M.; Purnell, D. C. and Owen, C. A.: Erythrokinetics in myxedema. *Ann. Intern. Med.* 67:533, 1967.

7. Muldowney, F. P.; Crooks, J. and Wayne, E. J.: The total red cell mass in thyrotoxicosis and myxedema. *Clin. Sci. Mol. Med.* 16:309, 1957.

8. Bomford, R.: Anemia in myxedema: And the role of the thyroid gland in erythropoiesis. *Q. J. Med.* 7:495, 1938.

9. Shalet, M.; Coe, D. and Reissman, K. R.: Mechanism of erythropoietic action of the thyroid hormone. *Proc. Soc. Exp. Biol. Med.* 123:443, 1966.

10. Donati, R. M.; Warnecke, R. A. and Gallagher, N. I.: Effect of triiodothyronine administration on erythrocyte radio iron incorporation in rats. *Proc. Soc. Exp. Biol. Med.* 115:405, 1964.

11. Horton, L.; Coburn, R. J.; England, J. M. and Hinsworth, R. L.: The haematology of hypothyroidism. *Q. J. Med.* 177:101, 1976.

12. Caplan, R. H.; Davis, K.; Bengston, B. and Smith, M. J.: Serum folate and vitamin B<sub>12</sub> levels in hypothyroid and hyperthyroid patients. *Arch. Intern. Med.* 135:701, 1975.

13. Irvine, W. J.; Davies, S. H.; Delamore, J. W. and Williams, A. W.: Immunologic relationship between pernicious anemia and thyroid disease. *Br. Med. J.* 2:454, 1962.

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# Outpatient Pain Clinic

## *Review of a Two-Year Experience*

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THE OUTPATIENT Pain Clinic at UKSM-KC was initiated within the Department of Anesthesiology in September 1977. Prior evaluation of pain clinics elsewhere indicated that convenience and cost effectiveness<sup>1</sup> were of primary importance. Access to multidisciplinary specialties for evaluation, guidance, and possible additional treatment was also a criterion.

Patients who visit the clinic are divided into three categories: (1) those for whom the cause of pain is known but no treatment has alleviated the pain; (2) those for whom the cause of pain is known but no effective treatment has been discovered; or (3) those for whom no cause of pain has been determined. This latter group may require hospitalization and the use of multidisciplinary approaches<sup>2</sup> from the beginning. At the same time, a triage physician must be designated. Demands of seeing many patients under limited circumstances and in a cost-effective manner could result in compromise of services; however, it is the goal of our clinic to serve each patient efficiently and effectively, and to maintain a good relationship with referral physicians.

The influence of psychological factors for pain problems should not be minimized.<sup>3</sup> However, it must be recognized that psychotic patients can also experience somatic pain. Thus, non-surgical modalities such as nerve blocks and nerve stimulation become an important aspect of the activities of the clinic.

### Methods

All patients who visit the pain clinic are referred by their own physicians. A letter of reference and a description of the patient's problems as well as physical status are submitted prior to the initial visit. The patient also fills out a pain questionnaire prior to the visit, and comes to the clinic with his or her spouse for the first interview. Most patients have been seen by numerous physicians such as a family

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**The Outpatient Pain Clinic was established in September 1977. Two years later, a followup questionnaire was sent to all patients who had been seen at the clinic. Of those who responded, approximately 40 per cent showed signs of long term improvement, while 60.3 per cent of patients indicated that the clinic had been helpful to them for pain relief.**

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physician, orthopedist, neurologist, neurosurgeon, psychiatrist, and other surgical specialists. They often claim this is the "last resort," since they have gone through rather extensive, exhaustive evaluations and treatments in the past.

All patients referred by physicians are accepted, including those involved in litigations, under psychiatric care, and those who have abnormal psychological profiles. Initially, patients discuss their problems in seeking help as well as problems associated with pain. Orientation in drug therapy regarding pain control is an important area, since some patients have taken excessive amounts or non-desirable medications for pain. Our mutual goal in pain control and how to approach it are explained. Those patients who are involved in litigation are reminded of the difficulty and possible conflict toward the patient's own goal in litigation, and our goal in pain control. When the patient decides to undergo treatment as an outpatient at the clinic, possible modes of treatment are discussed and potential risks inherent with the procedures are explained. The patient is asked to sign the consent form and also an authorization to furnish information to the patient's referring physician regarding findings made at the clinic. The patient who shows any signs of necessity for psychological profile evaluation will be requested to undergo this test and be analyzed by a psychologist for evaluation and recommendation. Consultation is also made for suggestions or for treatment by other specialties, such as rehabilitation medicine, psychiatry, neurology, or neurosurgery when needed.

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TABLE I  
CLASSIFICATION OF PAIN SYNDROMES OF  
PATIENTS SEEN AT PAIN CLINIC

	No.	%
Headache	15	6.1
Facial pain	7	2.8
Myofascial pain	14	5.7
Neck pain	5	2.0
Shoulder pain	8	3.3
Chest pain	5	2.0
Neuralgia	14	5.7
Upper extremity pain	2	0.8
Lower extremity pain	12	4.9
Visceral pain (thoracic)	2	0.8
Visceral pain (abdominal)	5	2.0
Low back pain	71	28.9
Low back pain (post-operative)	27	11.0
Pubic pain (perineal pain)	13	5.3
Causalgia	2	0.8
Post-operative scar pain	6	2.4
Post-amputation pain	5	2.0
Arthritic pain	11	4.5
Torticollis	2	0.8
Restless foot syndrome	1	0.4
Unknown origin	19	7.8
Total symptoms	246	100.0
Number of patients	216	

Modalities of treatment consist of a series of regional nerve blocks, transcutaneous electric nerve stimulation, and acupuncture treatment. Relaxation techniques and hypnosis are performed by psychologists. During treatment, patients are encouraged to reduce their use of medications and increase their activities. One month to a few months following completion of treatment, patients are asked to report the results of treatment, and additional treatment is advised if indicated.

In order to assess long-term results of treatment, a questionnaire/survey was conducted.

### Results

From September 15, 1977 through August 1, 1979, 216 patients were treated at the outpatient pain clinic. Of these, 131 patients answered the questionnaire. Of those who did not respond, one patient died from cardiac disease, some could not be contacted due to relocation, and others did not respond for unknown reasons. In order to obtain unbiased responses, questionnaires were unmarked; therefore we were unable to determine who did not respond.

A total of 216 patients visited the clinic and were treated for 246 pain problems (*Table I*). It is interesting to note that 39.9 per cent of patients had low back pain and 11.0 per cent of them had had lumbar laminectomies in the past (*Table I*). Patients were asked to compare the severity of pain before their initial visit and followup. Ninety-one and six tenths per cent of patients had fairly severe to unbearable pain. However, the followup reports indicate reduction of this population to 45.8 per cent (*Table II*). During the followup, 7.6 per cent of the patients were found to have increased analgesic medication, but 47.4 per cent either discontinued analgesic drugs entirely or were taking less than before treatment (*Table III*). The patients' daily activities before their initial visit and followup were compared. Before the initial visit, activities of only 9.2 per cent of patients were considered normal, or were normally maintained by occasional rest; clinic treatment increased this population to 32.1 per cent (*Table IV*). Patients who were totally incapacitated or had to be in bed most of the time comprised 6.9 per cent prior to treatment. No patient was found to be incapacitated following treatment, and only 1.5 per cent still had to stay in bed most of the time (*Table IV*).

TABLE II  
PATIENT'S ASSESSMENT OF PAIN INTENSITY AT INITIAL VISIT AND FOLLOWUP

Recall of Initial Pain	Evaluation of Pain at Followup						Total	
	No Pain	Mild	Uncomfortable	Fairly Severe	Very Severe	Unbearable	No.	%
Mild	0	0	0	0	0	0	0	0
Uncomfortable	3	0	7	1	0	0	11	8.4
Fairly severe	2	9	8	17	5	0	41	31.3
Very severe	5	9	14	10	21	2	61	46.6
Unbearable	4	2	8	2	1	1	18	13.7
Total	14	20	37	30	27	3	131	100
	(10.7%)	(15.3%)	(28.2%)	(22.9%)	(20.6%)	(2.3%)	100	



TABLE III MEDICATIONS USED AT FOLLOWUP OF PATIENTS WITH PAIN TREATED IN OUTPATIENT PAIN CLINIC		
Status at followup	Patients	
	No.	%
Use stopped	34	26.0
Use decreased	28	21.4
Use unchanged	33	25.2
Use increased	10	7.6
None used	26	19.8
Total	131	100

Before treatment, 19.8 per cent of patients were unable to work; this was reduced to 9.9 per cent after treatment. Before the initial visit, 19.1 per cent of patients could work normally. This population increased to 36.6 per cent following treatment (*Table V*). In response to inquiry regarding the benefit of the treatment rendered at the outpatient pain clinic, 60.3 per cent of patients responded favorably (*Table VI*).

Discussion

Although measurement is necessary in scientific research, measurement of pain in the clinical field is not simple.<sup>4, 5</sup> For the patient who suffers from chronic pain, relief of subjective symptoms may be more meaningful than judgments by clinicians or researchers. The real goal of the pain clinic is to ease the pain syndrome so that patients are able to lead more normal lives and become more active in their jobs and society.

Even if the pain is not entirely removed, if the patient is able to resume work due to a decreased degree of pain or controlability, this should be rec-

TABLE V PATIENT'S ABILITY TO WORK				
Ability	Initial Visit		Followup	
	No.	%	No.	%
Not able	26	19.8	13	9.9
Able, but do not work	6	4.6	8	6.1
Able to do limited or irregular work	74	56.5	62	47.4
Able to work normally	25	19.1	48	36.6
Total	131	100	131	100

ognized as the first giant step toward our goal. The patient requires reassurance and reinforcement of the initial treatment. It can be argued that this is merely a reinforcement of pain behavior,<sup>6</sup> but even if this were true, it may be less costly to manage pain than to pursue drastic measures. The difference between chronic pain and acute pain, and the different modes of treatment should be clearly explained to the patient.<sup>7</sup> The patient should also make a followup report following the first series of treatment. Thus the patient establishes a source of help in case a crisis situation arises, and this generates peace in the mind of the patient.

Since we endorse and utilize a multidisciplinary approach, patient referrals are made promptly when indicated. Usually the patient's referring physician is consulted as to a preferred specialist. However, when the patient and his/her physician wish to be followed by the University faculty, this can be carried out immediately.

Since it is our responsibility to serve as a consultant to the patient's primary physician, reports regarding treatment and results are transmitted at the completion of the first series of treatment. Also,

(Continued on page 288)

TABLE IV PATIENT'S EVALUATION OF DAILY ACTIVITY				
Activity	Initial Visit		Followup	
	No.	%	No.	%
Normal	6	4.6	27	20.6
Normal, but need more rest	6	4.6	15	11.5
Normal, with some difficulty	46	35.1	46	35.1
Activity very limited	64	48.8	41	31.3
Mostly confined to bed	6	4.6	2	1.5
Totally incapacitated	3	2.3	0	0
Total	131	100	131	100

TABLE VI PATIENT'S RESPONSES REGARDING BENEFIT OF TREATMENTS AT THE PAIN CLINIC		
Beneficial	Followup	
	No.	%
Totally agree	54	41.2
Partially agree	25	19.1
Disagree	45	34.4
Cannot decide	7	5.3
Total	131	



## Current COMMENT

H. B. LINDSLEY, M.D., *Editor*

### *Acute Pancreatitis*

NORTON J. GREENBERGER, M.D.,\* *Kansas City, Kansas*

#### General Considerations

INFLAMMATORY DISEASE of the pancreas may be acute, relapsing, or chronic. It is currently estimated that there are about 5,000 new cases of acute pancreatitis/year in the United States with a mortality rate of about 10 per cent. There are many causative factors in the pathogenesis of acute pancreatitis (*Table I*). While a good deal is known about the various conditions associated with the development of pancreatitis, the mechanisms by which these disorders trigger pancreatic inflammation have not been clearly identified.

#### Causative Considerations

The two most common causes of acute pancreatitis are alcohol ingestion and biliary tract disease; these two disorders account for the development of 75-80 per cent of cases of acute pancreatitis. In patients who develop recurrent pancreatitis without obvious cause, three disorders merit special consideration. First, the patient may be taking a drug associated with development of recurrent pancreatitis, thus necessitating a careful drug history. Second, pancreatic *divisum* should be considered. In this disorder, the main pancreatic duct is poorly developed and the accessory duct, which is also quite shortened, functions as the main pancreatic duct. The diagnosis of pancreatic *divisum* is established by carrying out endoscopic retrograde cholangiopancreatography (ERCP). Patients with pancreatic *divisum* appear to be unusually sensitive to alcohol, even in small doses. Third, patients with recur-

rent pancreatitis often have occult disease of the biliary tree or pancreatic ductal system. Accordingly, ERCP with careful visualization of both ductal systems should be carried out in such patients.

TABLE I  
CAUSES OF ACUTE PANCREATITIS

Alcohol ingestion
Biliary tract disease
Postoperative (abdominal, nonabdominal)
Trauma (especially blunt abdominal type)
Metabolic
Hypertriglyceridemia (especially Frederickson types I, IV, V)
Hyperparathyroidism
Renal failure
After renal transplantation
Hereditary pancreatitis
Pancreas <i>divisum</i>
Infections
Mumps
Viral hepatitis; other viral infections (coxsackie, echo virus)
Connective tissue disorders with vasculitis
Systemic lupus erythematosus
Necrotizing angiitis
Thrombotic thrombocytopenic purpura
Drug-associated
Definite association
Azathioprine
Sulfonamides
Thiazide diuretics
Furosemide
Estrogens
Tetracycline
Probable association
L-asparaginase
Chlorthalidone
Corticosteroids
Ethacrynic acid

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TABLE II  
DIAGNOSIS OF ACUTE PANCREATITIS

Definite pancreatitis
Causative insult identified (alcohol, gallstones, etc.)
Compatible physical examination (ileus, etc.)
Non-specific indicators of an inflammatory response
Fever
Tachycardia
Leukocytosis
Laboratory confirmation
* ↑ serum amylase (75% of cases)
* ↑ serum lipase (70% of cases)
↑ urine amylase (>80% of cases)
* ↑ pleural/peritoneal fluid amylase
* ↓ serum calcium (25% of cases)
↑ blood glucose
↓ arterial pO <sub>2</sub> (20% of cases)
↑ serum bilirubin (10% of cases)
*Abnormal flat film of the abdomen (>50% of cases)
*Abnormal ultrasound examination of the abdomen
Probable pancreatitis
Causative insult identified
Compatible physical examination
Non-specific indicators of an inflammatory response
Laboratory confirmation (not conclusive)
Possible pancreatitis
Causative insult identified
Abdominal pain
Non-specific indicators of an inflammatory response and laboratory confirmation (lacking)

\*Most important.

Diagnosis of Acute Pancreatitis

Abdominal pain is the major symptom of acute pancreatitis. Characteristically the pain, which is steady and boring in character, is located in the epigastrium and periumbilical region and often radiates to the back as well as the chest. Nausea, vomiting, abdominal distention due to gastric and intestinal hypomotility, and chemical peritonitis are also frequent complaints. The diagnosis of acute pancreatitis is usually established by the presence of increased serum amylase exceeding 200 Somogyi units. The diagnosis needs to be characterized in terms of definite pancreatitis, probable pancreatitis, and possible pancreatitis (*Table II*).

To establish a diagnosis of definite pancreatitis: the findings during physical examination should be compatible; the nonspecific indicators of an inflammatory response should be present; and there should be laboratory confirmation of the diagnosis as well. While all laboratory abnormalities listed in *Table II* are frequently present, it should be emphasized that many of these tests are normal in patients

TABLE III  
FACTORS ADVERSELY INFLUENCING PROGNOSIS IN ACUTE PANCREATITIS\*

Risk factors identifiable upon admission to the hospital
First attack of pancreatitis
Pancreatitis not associated with alcoholism
Increasing age
Hypotension
Tachycardia
Abnormal pulmonary findings
Abdominal mass
Fever
↑ WBC count
↑ blood glucose
Risk factors identifiable during initial 48 hrs of hospitalization†
↓ in hematocrit >10% with hydration or hematocrit <30%
Necessity for massive fluid and colloid replacement
↓ serum calcium
Hypoxemia with or without adult respiratory distress syndrome

\*Increased mortality with 3 or more risk factors present  
† Mortality rate is 65% with 3 or more of these 4 risk factors present.

with definite pancreatitis. In particular, serum amylase values are normal in up to 25 per cent of cases. If both the serum amylase and lipase are done, one of the tests will be abnormal in approximately 80 per cent of cases. Normal values for serum amylase, however, may occur if (1) there is a delay (2-5 days) in obtaining blood samples; (2) the underlying disorder is relapsing chronic pancreatitis rather than acute pancreatitis; or (3) hypertriglyceridemia is present. Patients with proven pancreatitis and hypertriglyceridemia have been found to have spurious low levels of serum amylase activity presumably caused by a circulating inhibitor of amylase activity; serial dilutions of plasma will correct this abnormality and permit identification of hyperamylasemia. Thus, in any alcoholic patient with abdominal pain found to have lactescent serum, the diagnosis of acute pancreatitis must be considered even if serum amylase values are normal. The flat film of the abdomen is abnormal in more than 50 per cent of cases; its chief value in acute pancreatitis is to help exclude other diagnoses, especially a perforated viscus.

A diagnosis of probable pancreatitis is suggested by (1) identification of a specific causative insult; (2) a compatible physical examination; and (3) non-specific indicators of the presence of an inflammatory response. Serum amylase, serum lipase, and urine amylase values are inconclusive.

The diagnosis of possible pancreatitis is suggested if a causative insult can be identified in a patient with abdominal pain. This is frequently seen in chronic alcoholics with a prior history of acute pancreatitis. If nonspecific indicators of an inflammatory response and laboratory confirmation are lacking, the important qualifier "possible" must be added to the diagnosis of pancreatitis.

The differential diagnosis of acute pancreatitis should include consideration of the following disorders: (1) perforated viscus, especially peptic ulcers; (2) acute cholecystitis and biliary colic; (3) acute intestinal obstruction; (4) mesenteric vascular occlusion; (5) renal colic; (6) myocardial infarction; (7) dissecting aortic aneurysm; (8) connective tissue disorder with vasculitis; (9) pneumonia; and (10) diabetic ketoacidosis. A perforated duodenal ulcer is readily diagnosed by the presence of free intraperitoneal air. Acute cholecystitis may be difficult to differentiate from acute pancreatitis since an elevated serum amylase may be found in both disorders.

### Course of the Disease and Complications

Factors that adversely influence the prognosis of acute pancreatitis are listed in *Table III*. An increased mortality has been observed when three or more risk factors are identifiable upon admission to the hospital. It is interesting to note that alcoholism is a negative risk factor, *i.e.*, pancreatitis not associated with alcoholism carries a higher mortality rate. Patients with chronic alcoholism in their first bout of acute pancreatitis may in fact already have chronic pancreatitis; what appears to be acute pancreatitis is in actuality an episode of acute pancreatitis superimposed upon chronic pancreatitis. The four key risk factors that clearly influence the outcome of an episode of acute pancreatitis are: (1) a decrease in hematocrit levels >10 per cent with hydration or a hematocrit <30 per cent; (2) necessity for massive fluid and colloid replacement; (3) low serum calcium level; and (4) hypoxemia with or without adult respiratory distress syndrome. If three or more of these risk factors are present, the mortality rate is approximately 65 per cent. The high mortality rate of such severely ill patients, despite maximal medical treatment, suggests alternative therapeutic approaches such as peritoneal lavage or early surgical intervention merit broader consideration.

The complications of acute pancreatitis are listed in *Table IV*. Pseudocysts of the pancreas are collections of tissues, fluid, debris, pancreatic enzymes and blood, which develop over a period of 1-4 weeks

after the onset of acute pancreatitis. The major complications of pancreatic pseudocyst include pain, rupture, hemorrhage, and infection. Sonography permits differentiation between an edematous and inflamed pancreas (pancreatic phlegmon), which can give rise to a palpable mass, and an actual pseudocyst. Furthermore, serial ultrasound studies will indicate whether a pseudocyst has resolved. Pulmonary complications develop in approximately 10-20 per cent of patients with acute pancreatitis; these include acute pneumonitis, pleural effusion with a raised amylase concentration, and adult respiratory distress syndrome. Cardiovascular complications include hypotension and sudden death. Gastrointestinal hemorrhage can develop as a result of activation of peptic ulcer disease, erosive gastritis, or hemorrhagic pancreatic necrosis with erosion into major blood vessels. Rarely, it can develop from portal vein thrombosis with resultant development of portal hypertension and variceal hemorrhage. Such gastrointestinal bleeding may be complicated by the development of disseminated intravascular coagulation (DIC). The renal complications of oliguria and azotemia usually resolve with restoration of a normal intravascular volume. Metabolic complications include hyperglycemia, hypocalce-

TABLE IV  
COMPLICATIONS OF ACUTE PANCREATITIS

Local
Pancreatic pseudocyst
Pancreatic abscess
Pancreatic ascites
Intraperitoneal hemorrhage
Systemic
Pulmonary
Pneumonitis
Pleural effusion
Adult respiratory distress syndrome
Cardiovascular
Hypotension
Sudden death
Gastrointestinal hemorrhage
Disseminated intravascular coagulation (DIC)
Renal
Oliguria and azotemia
Metabolic
Hyperglycemia, hypocalcemia, hypertriglyceridemia
Central nervous system
Psychosis
Fat emboli
Fat necrosis
Subcutaneous tissues (erythematous nodules)
Bone



mia, and hypertriglyceridemia. Central nervous system complications include psychosis and fat emboli. Disseminated fat necrosis with development of subcutaneous erythematous nodules, which mimic erythema nodosum, may be an important clue to the diagnosis of acute pancreatitis.

### Treatment

In approximately 85-90 per cent of patients with acute pancreatitis, the disease is self-limited and subsides spontaneously — usually within three to seven days after treatment is instituted. Medical therapy is aimed at reducing pancreatic secretion and, in essence, “putting the pancreas at rest.” Routine measures include (1) nothing by mouth or no oral alimentation; (2) intravenous fluids and colloids to maintain intravascular volume; (3) nasogastric suction; (4) correction of electrolyte abnormalities; and (5) analgesics for pain.

Specific measures for severe pancreatitis include appropriate antibiotic therapy for established infection (ascending cholangitis, sepsis) or peritoneal lavage. Procedures of no proven value include the use of anticholinergic drugs, glucagon, or kallikrein inhibitors such as traysylol and cimetidine. There are no controlled trials demonstrating that anticholinergic drugs are superior to placebo. Moreover, anticholinergics may make it difficult to determine whether tachycardia, bowel hypomotility, need for additional fluid replacement, and signs of toxicity are due to the drugs *per se* or to a worsening of the pancreatitis (*Table V*).

### Summary

Inflammatory disease of the pancreas may be acute, relapsing, or chronic. The two most common causes of acute pancreatitis are alcohol ingestion and biliary tract disease. Abdominal pain is the major symptom of acute pancreatitis. To establish a diagnosis of definite pancreatitis: (1) the findings upon physical examination should be compatible; (2) nonspecific indicators of an inflammatory response (fever, tachycardia, and leukocytosis) should be present; and (3) laboratory abnormalities should be present as well. The serum amylase level is elevated in 75 per cent and the serum lipase in 70 per cent of patients with acute pancreatitis; one of the tests will be abnormal in approximately 80 per cent of cases. In approximately 85-90 per cent of patients with acute pancreatitis, the disease is self-limited and

TABLE V  
TREATMENT OF ACUTE PANCREATITIS

In 85-90% of patients, acute pancreatitis is self-limited and subsides spontaneously within 3-7 days.
Routine measures
NPO (No oral alimentation)
IV fluids and colloids to maintain intravascular volume
Nasogastric suction (optional)
Correct electrolyte abnormalities
Analgesics for pain
Specific measures for severe pancreatitis
Antibiotics (for associated cholangitis or sepsis)
Peritoneal lavage (in via dialysis catheters or after laparotomy)
Of no proven value
Anticholinergic drugs
Glucagon
Kallikrein inhibitors (traysylol)
Cimetidine

subsides spontaneously — usually within three to seven days after treatment is instituted. Medical therapy is aimed at reducing pancreatic secretion and “putting the pancreas at rest.” Routine measures include (1) restricting the patient to nothing by mouth; (2) intravenous fluids and colloids; (3) nasogastric suction; (4) correction of electrolyte abnormalities; and (5) analgesics for pain.

### Self Assessment Questions

1. List five drugs definitely associated with the development of acute pancreatitis.
2. List four key factors that clearly influence the outcome of an episode of acute pancreatitis.
3. What laboratory tests are helpful in confirming the diagnosis of acute pancreatitis?
4. What are the local complications of acute pancreatitis?
5. What are some important systemic complications of acute pancreatitis?

(Answers on page 328)

### Suggested Readings

1. Greenberger, N. J.; Toskes, P. and Isselbacher, K. J.: Diseases of the Pancreas. *Harrison's Principle of Internal Medicine*, 9th Edition. New York, McGraw Hill, pp. 1502-1514, 1980.

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## *The President's Message*

The Kansas Medical Society annual meeting of 1981 is a story of success and achievement. All aspects of the convocation moved smoothly, reflecting extensive planning and diligence to detail by our hosts, the Saline County Medical Society. We thank you, Salina!

It was refreshing to see new, enthusiastic faces and especially younger faces at this annual session. I would urge you personally to attend the KMS meetings. I anticipate that you would become interested in the political process and help us through the unpredictable times ahead.

The House of Delegates had its perennial share of disagreements, but the democratic process prevailed and our mission was accomplished. One of the more controversial resolutions was No. 81-9, concerning regulations for Advanced Registered Nurse Practitioners. The House of Delegates directed that the legality and validity of the regulations be tested in court. Our position is as follows:

The Kansas Medical Society supports the basic concept of the Advanced Registered Nurse Practitioner and recognizes that an appropriately educated nurse can competently perform selected delegated medical tasks traditionally performed personally by the physician. However, the provision of these services should remain the responsibility of the physician licensed to practice medicine and surgery, and the ARNP should function as a member of a physician directed health care team.



The Kansas Medical Society believes that the ARNP Regulations which took effect May 1, 1981, are vague, blur the distinction between physician and nurse, and go beyond legislative authorization for such nurses. KMS has consistently maintained that these regulations should be a clearly understood, working guide for the professionals in the field, setting forth concise and precise parameters of practice for advanced trained nurses. As currently worded, the regulations fall considerably short of that mark, and will tend to further confuse an important area of concern between physicians and nurses in the appropriate delivery of health care. KMS has asked for a judicial review of this issue with the hope that these ambiguous regulations can be clarified and the substantive issues settled quickly.

Fraternally,

*Herman W. Hiesterman M.D.*  
President





## Balancing Act

A few weeks ago, a business magazine published an interview with a jurist of some distinction in which the gentleman took the opportunity to urge business people to pursue the full resources of the courts in matters of contention rather than resolving them by out-of-court settlements or other compromising maneuvers. To dispel their uneasiness over the possibility of excessive judgments against them, he commented, "It may be that some verdicts are excessive, but I doubt it over all. If you balance the guys who don't get what they deserve and the ones who get too much, you probably come out even."

As we pondered the thought, it seemed that the gentleman had perhaps lapsed into thinking he was involved in an informal chat with a confidant rather than an interview for publication. But before we could get that into focus, we caught a glimpse of Justice in her characteristic pose but with her blindfold slightly askew, a sneaky grin tugging at the corners of her mouth, and her scales swaying in vertical nystagmus. Then we realized he had only given voice to a fundamental and prevalent mechanism of the human state, and the disclosure should come as no surprise other than the fact that he would make it public and seem to divest the judicial function of some of the sanctity with which we have endowed it over the years. The remark should not be taken as a veiled suggestion that one keep an eye on the court docket in the hope of timing one's legal excursions with the fortuitous swing of the scales or check the astrology column each morning or even select Jimmy the Greek as one's advocate rather than Edward Bennett Williams. He only stated a universal principle which comes close to being a *sine qua non* for medical practice. Unspoken though the thought may be, this balancing of positives and negatives, this resolution of pluses and minuses, this blending of yin and yang, have been hallmarks of the medical profession for ages.

It is not just a matter of considering it a satisfactory day when one produces diabetic comas and insulin reactions in equal numbers. Consider that most direct contact of medicine and law, the malpractice case. It is now apparent that physicians, in the agony of adverse judgments, have failed to recognize justice being done. What physician, confronted with a verdict that would beggar a federal bureau, stops to realize that he is only making up for his colleagues who are never hailed into court or make it home free? And there is the matter of unnecessary surgery. The profession has futilely maintained that there was no such thing (except a few blackguards who turned state's evidence). Had it but acknowledged this most ancient of traditions, it could have accepted that perhaps a few uteri or tonsils were dispossessed with less than valid eviction notices, but they are at least equalled by those remaining in situ — or removed with proper credentials. At least, it could be stressed that the unnecessary procedures, by fulfilling this balancing role, become necessary thereby, and the whole matter becomes moot or vacated or something legalistic.

It is continually demonstrated that society's griefs stem from violation of the old principles, and it becomes clear that the problems that have beset the medical profession in recent decades are proof — we have upset the balance. The departure of the profession from the balanced life would be dated by a medical anthropologist at about 1910 (give or take a million years as anthropologists do). It was at that time, so it has been reported, that medical expertise reached the level that a given patient consulting a given physician had, for the first time in history, a better than even chance of benefitting from the encounter. The Golden Age of Medicine was not just beginning — it was over. No longer did the concerned manner, the laid-on hand, the somber visage with the warm but noncommittal smile, or even the

noxious saline mixtures suffice. Science, with a mocking typographical error, changed the script from *care* to *cure* and society would have it no other way. Throw out this kindly old character in favor of the knife-wielder and germ-killer.

In its rush to meet the consequent demands, the profession responded valiantly but not without a mixture of hostility, guilt, and confusion. It has made errors and has had setbacks. Above all, it has failed to exploit the obvious interpretation — as long as the adverse effects and the benefits are in equilibrium, what's the problem? In its quest to be all things to all people, the profession has pushed its inadequacies into glaring relief. It has let iatrogenesis become a dirty word instead of a necessary component of the ever-new, ever-old, always essential equation of life and in doing so it has incurred more griefs than Hippocrates ever dreamed of, much less included in his manifesto.

It was probably no accident that about this time, Dr. Flexner was playing hob with the medical school system that had spawned all these kindly, time-taking, house-calling, low-charging physicians. To correct the seeming educational deficiencies, the profession gave the pendulum a healthy swing the other way by extending and stiffening medical training, promoting specialty practice, fostering the idea that hospitals were places to get well in, not to die in. (All of which came to be, of course, proof that the profession was running a closed shop.)

The effect of this revolution was to produce many more people than we had really counted on. It wasn't too noticeable at first because there was quite a bit of room to take up the expanding population. If there were no physicians in the area, it was all right because there weren't many people either. But the imbalance, once started, was self-aggravating and we wound up with people all over the place. A lot of these extras were turned into sociologists to help resolve the resulting problems. They understood this matter of balance and met it by creating as many problems as they solved. This provided for the intake (sociologic expression) of more of the burgeoning crop and turning them into lawyers. From the combination sprang a hybrid form known as the bureaucrat. Once out of balance, as the Bard put it, the currents turned awry, but did not, as he also put it, lose the name of action — rather gained it exponentially. If conscience made cowards of some, it turned others into lions (all right, Will, we'll let up on you now). The most profound expression of the imbalance was overlooked — that the benefits so proudly hailed required remuneration since it became unfashionable for anyone to do anything for

free. This problem was met by a different mechanism of balance — printing paper to pay for some of it and ignoring the rest by assuming that deficit was preferable to the discomfort of balance. Since this attitude was generally accepted (nearly everyone getting something out of the pot), this situation was accepted as a proper balance for the socially enlightened age and to question it was at least bad manners.

Along with this new balance concept came another phenomenon, the doctrine of disposability. When life was more fundamental, it was the attitude that the materials essential to man's survival, whether protective, assaultive, or nutritive, should be preserved and cared for. Animals were disposable because there were always more where they came from and mankind, not wishing to be beastly just to the beasts, included itself at regular enough intervals to help maintain the balance. Land and its contents were disposable because, as anyone could see, there was a vast supply of both.

But this burgeoning mankind spawned a new system: use and eliminate — even those things it had carefully harbored before. Obsolescence became the directive theme. This assured the increasing population of work since the economy was based on adding new and disposing of old whether by fire, water, or storage out of sight. Society's interest in balance focused not on creation and preservation but on production and disposal.

Innately conservative, physicians and hospitals looked askance at the trend at first but when they saw what it was costing to clean up and reuse the old, not to mention the legal problems in the risk of transmitting something from one person to another, they saw the light. Like late converts in fear of missing the Glory Train, they took to the disposable philosophy with a vengeance. Not only was it cheaper to buy the new (and disposable) than pay someone to maintain the old but there were new models coming along (in the name of progress) and one had to compete by promising the latest (which became synonymous with best). It became a simple matter to justify mounting expenses as essential to the patient's needs and by the time someone tried to figure out the cost of the system in relation to the actual improvement of life or health, the process was so muddled by medical, social, political, and economic considerations, no one could figure out what to do about it but award Ph.D.s to people who wrote about it. And since the government was the primary exponent of the philosophy, the Ph.D.s went to work for it, assuring perpetuation of the system.

A whole new industry was built on trying to define and regulate the system. Since no one knew for sure



what was going on, it was decided to ask the public if it knew. A variety of polls sprang up. It was hoped that from them the true way would emerge and, in fact, a sort of balance was achieved since the polls were interpreted in whatever manner was agreeable to the interpreter. Physicians, preoccupied with fulfilling their increasingly healing roles, finally came to see the shift in the medical care balance: the control of medical matters was now only marginally influenced by their professional services (although they were blamed for all the social deficiencies and financial inequities of the system). The specter of their own disposability became all too clear as the public began calling on a wide range of functionaries for its medical care (which wasn't at all what the medical profession considered balance).

Well, the forces of balance are strong even if it's

not always apparent what's being balanced, or if there is little agreement as to what balance is. If one seeks the ultimate equilibrium, one finds one's answer is not valid since the factors have changed even as the reaction is taking place. The only hope, aside from retreating to that inviting mountain top (requiring, of course, a balance with the rarefied atmosphere) is to wait. Balance, after all, is stasis. The man was right. If things go too far one way, it won't be long before they go too far the other way. Contentment lies in the process, not in achieving either extreme and certainly not in fretting about the proper point at which to jump on — or off.

So, when someone issues you that gooey greeting, "Have a good day," acknowledge it politely but pause and ponder: What, then, of tomorrow? — D.E.G.

## Vitamin B<sub>12</sub> Absorption

(Continued from page 286)

accurately established. Serum gastrin concentration (fasting) was elevated. However, his serum did not reveal gastric parietal cell antibody or IF antibody. It is unusual for both parietal cell antibody and IF antibody to be absent in patients with pernicious anemia. Patients with agammaglobulinemia may fail to produce these antibodies. However, in the case under study, serum protein electrophoresis was normal. There was also an absence of antithyroid antibody which has been reported present in 55 per cent of cases of pernicious anemia.<sup>9</sup> Studies for the occurrence in the gastric juice of antibody to IF-B<sub>12</sub> complex were not performed in this case. However occurrence of this antibody is unlikely since the Schilling test part II performed on September 20, 1978, revealed 17 per cent absorption of cyanocobalamin-<sup>57</sup>Co.

The patient had diet-controlled diabetes mellitus. There is a slight increase in the incidence of diabetes in patients with pernicious anemia,<sup>9</sup> but the occurrence of diabetes in this patient may be just coincidental.

## Summary and Conclusions

A case of pernicious anemia is reported. The patient, age 59, had malabsorption of vitamin B<sub>12</sub>-IF complex. The defect was corrected with vitamin B<sub>12</sub> therapy, and he also attained complete hematological remission. It is concluded that defective absorp-

tion of vitamin B<sub>12</sub>-IF complex, as revealed by the Schilling test part II, does not exclude pernicious anemia, and a repeat study after several weeks or months of vitamin B<sub>12</sub> therapy is indicated.

## References

1. Haurani, F. I.; Sherwood, W. and Goldstein, F.: Intestinal malabsorption of vitamin B<sub>12</sub> in pernicious anemia. *Metabolism* 13:1342-1348, 1964.
2. Brody, E. A.; Estren, S. and Herbert, V.: Coexistent pernicious anemia and malabsorption in four patients, including one whose malabsorption disappeared with vitamin B<sub>12</sub> therapy. *Ann. Intern. Med.* 64:1246-1251, 1966.
3. Carmel, R. and Herbert, V.: Correctable intestinal defect of vitamin B<sub>12</sub> absorption in pernicious anemia. *Ann. Intern. Med.* 67:1201-1207, 1967.
4. Goldberg, L. S.; Bickel, Y. B. and Fudenberg, H. H.: Immunologic approaches to malabsorption of vitamin B<sub>12</sub>. *Arch. Intern. Med.* 123:397-400, 1969.
5. Lindenbaum, J.; Pezzimenti, J. F. and Shea, N.: Small intestinal function in vitamin B<sub>12</sub> deficiency. *Ann. Intern. Med.* 80:326-331, 1974.
6. Beck, W. S.: Vitamin B<sub>12</sub> deficiency (Chapter 34). *Hematology*, Second Edition (Williams, W. J. Ed.). New York, McGraw-Hill Book Company, pp. 307-334, 1977.
7. McDonald, J. W. D.; Barr, R. M. and Barton, W. B.: Spurious Schilling test results obtained with intrinsic factor enclosed in capsules. *Ann. Intern. Med.* 83:827-829, 1975.
8. Ganguli, P. C.; Cullen, D. R. and Irvine, W. J.: Radioimmunoassay of plasma gastrin in pernicious anemia, achlorhydria without pernicious anemia, hypochlorhydria and in controls. *Lancet* 1:155-158, 1971.
9. Wintrobe, M. M.: Pernicious anemia (Chapter 15). *Clinical Hematology*, Seventh Edition. Philadelphia, Lea and Febiger, pp. 602-620, 1974.
10. Schade, S. G.; Feick, P.; Muckerheide, M. and Schilling, R. F.: Occurrence in gastric juice of antibody to a complex of intrinsic factor and vitamin B<sub>12</sub>. *N. Engl. J. Med.* 275:528-531, 1966.

## Official Proceedings

*(Continued from page 269)*

administration's proposal in the near future. The KFMC can continue to be an effective organization with the support of Kansas physicians. We need that support now, and would solicit your help.

### Executive Director — Jerry Slaughter

I am going to be very brief, and just touch on a few things relating to the work of the Society. First of all, I want to tell you that you belong to the oldest corporation in the state. In 1859, the Kansas Medical Society was granted a charter by the Territorial Legislature. At that time that was an act of Congress, if you will, since Congress granted the territory the right to make laws before the state entered the Union. So the organization has been around for quite a while.

You can see from the treasurer's report that the Society is in good financial condition. When I came to work for the Medical Society we were living hand to mouth. It was not unusual for us to borrow money in December to make the December payments until January dues came in. That is no longer the case, as investments have done very well and we continue to have a good financial base. The leadership of the Society functions well; the Executive Committee, the Council, and the rest of the committees actively meet during the year.

Just a note about this organization: In my work I have an opportunity to observe many other professional associations. I can tell you there is not a more democratic organization than the Kansas Medical Society. If there is one, it is probably the AMA. Being a part of this organization, I have seen, and it works, that one inspired individual can take the initiative and change and shape policy. I think that's a healthy phenomenon. We have detractors: Dr. Gleason mentioned that we have physicians who occasionally come to the Legislature and take the opposite position than we do. I don't think that's bad; I think that's healthy. So I want to report to you that the organization is on a sound footing and going strong.

A couple of words about the environment that we face. To begin with, I guess my basic optimism colors this, but I don't believe we are in a hostile environment. It is, however, a demanding environment, an environment that demands each one of you as individual physicians and we in the organization to respond to the needs of society, as well as the needs of the membership. Obviously, the lifeblood

of our organization is an active membership. It's simply vital to the functioning of the Society. Without individuals, without committees, without county medical societies that are willing to take an active part, we would simply have to fold our tent and go home. You know, as I have been with the medical society for eight years now, and involved in the political scene at the state Legislature, I have seen how surprisingly easy it is for a group or several individuals to have a significant impact, if only they are willing to lead and not follow. The political system loves leaders, and if you are willing to stand up and be counted and take the abuse when it's due, but also take the credit when it's due, you can lead the system. I think it is incumbent upon members of the medical profession by virtue of their training and their responsibility in the community to be such leaders. As long as we can maintain our clear advocacy for patients and quality medical care, we'll do well.

In his remarks, Dr. Nelson mentioned a couple of things that I won't expand on, but points that I think hit the nail on the head. The system that we are in today is really just a vast health marketplace. We're seeing it nationally, and we are certainly seeing it in Kansas. There are more professionals, paraprofessionals, and pretenders delivering services now than at any time in history, and I don't believe that things are going to swing the other way soon. I believe that it is the phenomenon of today that we are going to have more people seeking a higher professional identity. We've heard the discussion about the nurses and others who want to become an active part of the system. They each want to carve out a piece of the health pie. What this means is that physicians, in my opinion, both individually and collectively, are going to have to forcefully and very visibly let the public know that they are a key part of good health in this country. They can't be embarrassed or shy about it, but have to go out and say that physicians are the ones who are safeguarding the health of this country, not anybody else. Others may have a place, but the central role in the delivery of medical care has to be a physician. I believe if we ever fail to emphasize that firm objective, the end will be shortly nearby.

One other comment, and this relates generally to the economic situation that we are in. I am convinced that the primary force for change in the health system for the next couple of decades is going to be the economics of the system. As the pressure from insurers, the public, industry and government intensifies, decisions will be made on the basis of how to get the most bang for the health buck. That is not necessarily bad. It's bad if we are not prepared to



meet that challenge. If we are prepared to meet the challenge, it could be good for patients and physicians. Let me give you an example of how severe I think this problem is. When I came to work for the medical society eight years ago, 1973, the Medicaid budget in this state, including the budget for nursing homes, hospitalization, laboratory services — the total program — was \$45 million. The Legislature this last week approved a FY 1982 budget of \$220 million. *Two hundred twenty million dollars*, and we don't have all that many Medicaid recipients in this state. I submit to you this is a serious problem. We spend \$83 million a year on nursing homes. Of all the nursing home beds in this state, half are filled with Medicaid patients. That may be more of a phenomenon of the changing demographics of our state than the health of Kansans. We spend \$60 million a year on hospitalization. The Department of SRS, as you may know, just introduced a proposal to cut off reimbursement of hospital stays at the 50th percentile — *simply cut it off!* This proposal wouldn't send those people out of the hospital. Physicians or hospitals can't just turn somebody out because Medicaid quits paying. What that simply means is that Medicaid is going to shift the responsibility for payment of that bill to the private sector, to the physicians and hospitals. In other words, other people are going to pay the bills. I think this is the beginning of a trend that is not going to change very quickly. As nearly as I can tell from what the Reagan administration has been saying, their economic plan is going to shift more responsibility to the state. I am telling you the states are not willing — at least this state isn't — to spend very much more money on Medicaid, and that translates into physicians getting less for providing more services. It's not a rosy picture, but I think it's one we can deal with if we get on the cutting edge and help make the decisions.

Well, enough about economics. I'd like to say a couple of words about this job. One of the pleasures of this work is the opportunity to meet with people like you — all of you who serve on committees and the elected officers. I just can't tell you what a fine bunch they are. You know there are many others who during the year contribute their talents and expertise to make the society go. I call on many of you, especially a group of physicians in Topeka, that I call on in a minute's notice to see a legislator or someone else who has a medical problem. I just can't tell you how much I appreciate all the help you have given me. Dr. Godwin has had a very productive year and served you well. He's a remarkably perceptive man, and very thoughtful, and he's dealt with the problems that have faced us in a very

reasonable manner. I believe the Society has benefited immensely from his leadership.

I am especially thankful for the tremendous office staff. I have the utmost respect in their abilities. I want to especially recognize Val Braun and Gary Caruthers. These are two of the most understanding, hard working, and loyal people I have ever met. I consider it a real privilege to have a staff like this.

Finally, if you all will permit me a personal comment: You know, this is like coming home, since I was born and raised here. Much of my fond feeling for the medical profession came about as a result of my knowing the fine medical community in Salina. Many of these people I have known all of my life and I think very highly of them. Two of them especially: my grandfather, Ned Cheney, practiced medicine here. Some of you who are a little older may have known him. My father-in-law, Fred Gans, is a pediatrician here. Both men are very special to me, and I think they represent the finest in physicians and gentlemen.

I have one final comment. I am very proud to be a part of this organization. It was one of those serendipitous things when I just happened to be the right guy in the right place at the right time, so I got the job eight years ago, and am very grateful. I consider it a real privilege to work for you, and am looking forward to good years ahead.

#### **Address by Wayne Johnston — President, Blue Cross and Blue Shield of Kansas**

Anyone speaking to such a prestigious group as this should be expected to present a reasonable balance of good news and bad news. In fact, it should be weighted toward the good news if at all possible. Such is not the case today.

A number of factors have evolved in recent months that can best be described as being extremely hazardous to the viability of our private sector health care system. I cannot remember a time during my 28 years of experience in which the well-being of our health care system has been such a critical issue.

Two of the major critical issues I would like to discuss with you today are: (1) An enormous overutilization of inhospital care by Kansas consumers; and (2) The transfer of medical expenses from the government to the private sector.

Before getting into the specifics of these two issues, I'd like to first take a quick global look at the cost of health care in the United States and what it has done over a period of time. In 1950, the total health expenditure for the citizens of this country was \$12 billion, representing 4.6 per cent of the gross national product. Thirty years later, in 1980,

the health bill of this country had increased to \$235 billion, representing 9.4 per cent of the gross national product, or almost a 2,000 per cent increase. Of greater concern is the fact that the increase in the health care expenses of this country from 1979 to 1980 was \$23 billion which is almost twice the total health bill in 1950. More appalling is the fact that it is estimated the cost of health care in the United States will be \$279 billion in 1981; \$462 billion in 1985, and \$821 billion in 1990 representing approximately 10.8 per cent of the gross national product. In the next ten years, the cost of health care will increase from 300 to 400 per cent. This is likely to be a conservative estimate.

Three observations should be made regarding the national statistics: (1) The consumer has an insatiable appetite for health care; (2) Prepayment mechanisms — such as Blue Cross and Blue Shield — have contributed significantly to this dilemma; and (3) Employers and workers are finding the cost of health care almost out of reach.

As I said at the outset, one critical issue is an enormous overutilization of hospital care by Kansas citizens. The Blue Cross Plans throughout the United States record and maintain data related to the use of hospital care by their various subscribers. The information is accumulated based on the number of hospital days used/1,000 subscribers. The average for all states is 728 days of in-hospital care used/1,000 subscribers in 1980. During 1980, Kansas Blue Cross subscribers used 995 days of hospital care/1,000 subscribers. This is 267 days greater than the national average.

Using the average of all states, each 1,000 subscribers in 1980 had 117 hospital admissions compared to Kansas' 171 admissions or a difference of 54 more hospital admissions/1,000 subscribers.

I had the Research Department of our Plan determine what savings would have accrued to the Kansas Plan in 1980 had Kansas subscribers used hospital days at the national average. Had Kansas subscribers used 728 days of hospital care/1,000 subscribers, we would have paid \$46 million less than we actually paid.

I'm sure that all of you are wondering why the use of hospital care is so high in Kansas. It can be attributed to numerous factors such as Kansas being a rural state; a state that has an older population than some states; it's a state that has more hospital beds/1,000 than many states, and a number of other factors. But it's interesting to note that all states surrounding Kansas have substantially fewer days of in-hospital care. One state bordering Kansas experience utilization of 702 days of hospital care/1,000.

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The fact still remains that we are using more hospital days than all other states of the United States with the exception of one.

This was vividly brought to my attention when we were preparing a bid for a national employer with employees in Kansas, Missouri, Oklahoma, Arkansas, and Texas. Keep in mind that this national employer provides the same benefits in each state and each Blue Cross-Blue Shield Plan charges the same amount for administering the program. But in Kansas we needed a rate much greater than in the other four states due to the high utilization of hospital services. I will talk more about plans that we have to favorably impact this critical issue later.

The second issue I alluded to at the outset was that there are tremendous hunks of medical expense now paid or previously paid by the federal government that are being transferred to the private sector. Approximately \$40 million of hospital expense is being disallowed by Medicare and Medicaid. In addition, there is a proposal by the Secretary of Social and Rehabilitation Services in Kansas that hospitals will be paid only up to the PAS 50th percentile for hospital admissions for Medicaid recipients. There are several estimates, ranging in the

neighborhood of \$12 million, that will be transferred to the private sector.

Proposals before Congress are recommending that the primary carrier for the federal employee annuitants be transferred to the private sector and that Medicare be secondary carrier, and it is estimated by the federal government that this will save \$600 million nationally. Another proposal is suggesting that the private sector commence paying for services rendered to veterans in VA hospitals for non-service connected care — estimated savings, \$200 million. Another proposal suggests that the private sector assume Medicare's end-stage renal dialysis program as primary carrier and the estimated savings — \$100 million. It is also suggested that the Medicare Part B deductible be increased from \$60 to \$75 which would generate an annual savings by 1983, and a transfer of cost to the private sector, of \$380 million. As you know since the inception of Medicare, the Part A deductible has increased from \$40 to \$204.

There is a proposal before Congress to eliminate the 8½ per cent nursing differential granted to hospitals for the care of Medicare patients. While there is no estimate of the cost transfer to the private

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sector, it will be substantial. The Reagan administration is proposing to cut the Medicaid budget by \$100 million in 1981 and place a 5 per cent ceiling on increases in federal Medicaid money in 1982. The estimated savings is \$927 million.

A very popular proposal in Washington is referred to as "pro-competition." Pro-competition in essence suggests that every employer provide to each of his employees a choice of from three to six different programs. The various programs would provide various levels of coverage. It's quite obvious that if this were to occur, the young and the healthy would choose the lower benefit coverage. The older and the ill would select the highest level of coverage. The very basis on which group coverage was established was that all employees share the risk of health care. If we were to establish the "pro-competition" model it would substantially increase the administrative expense of the program and quite likely increase the cost of health care.

We are all concerned about inflation, the need to balance the budget, lower taxes and reduce government regulation and intervention, but we also must recognize the devastating impact this has on the private sector as it relates to the ability of non-Medicare and Medicaid consumers to pay for health care. What I have just recited to you is not a reduction of spending. It is merely a transfer of cost of health care from the government to the private sector.

Many Kansans are now paying as much as \$250/month (\$3,000/year) for their Blue Cross and Blue Shield coverage. It was not long ago that one could buy a house for a similar amount of money. Because of increased utilization and cost, Blue Cross and Blue Shield of Kansas withdrew from reserves \$17.5 million in 1980. Eight and three-tenths million was withdrawn from reserves in Blue Cross and \$9.2 million from Blue Shield.

Had the Insurance Department not approved a rate increase of \$32 million for 1981, our financial situation would be critical. For the first time in the history of the Plan, our claims expense in April exceeded the month of January which is usually the highest claims month. Also, for the first time in the history of our Plan, we may have to ask for a second rate increase in one year.

Back to the question of high utilization of hospital care in Kansas, and how we might favorably impact it. Our Boards of Directors have granted permission for us to exercise the provision of the subscriber contract related to not paying for unnecessary medical care. While this forum is not appropriate to discuss the details of the program that we would like

to discuss with you, I would encourage each of you to meet with our staff at your local society, at your hospital medical staff, or in specialty groups so that we might discuss our new utilization review program with you and get your feedback.

We would like to initiate an intensive subscriber educational campaign to announce that Blue Cross-Blue Shield will intensify efforts to pay for only those services that are medically necessary and for services that are provided in the most appropriate cost-effective setting. Emphasis will be placed on the following categories:

- Extended Duration Stays — Hospital stays in which the patient's length of stay may exceed regional norms for the average length of stay of patients with the same or related condition.
- Unnecessary Admissions — Hospital stays in which the patient could have effectively received diagnostic services and treatment without having been admitted.
- Dental Admissions — Hospital stays in which the patient was admitted for dental procedures unless there is non-dental medical justification for the necessity of the admission.
- Unnecessary Surgical Admissions — Hospital stays for surgery that could have effectively been performed as a hospital outpatient or in the physician's office (same day surgery).
- Elective Surgery — Hospital stays for elective surgery in which the pre-operative length of stay exceeds one day.
- Inpatient Ancillary Services — Hospital stays in which the ancillary services provided to the patient were not medically necessary nor consistent with the patient's diagnosis.

We would like to conduct an intensive subscriber and provider education program through the media and personal meetings as to the policies and procedures of the utilization review program and the benefits that can be accrued from appropriate utilization without jeopardizing the quality of health care.

As I mentioned to you earlier, we are eager to meet with your local Society, with your hospital medical staff, and with specialty groups. We have held five regional hospital meetings with hospital administrators and we met with the Kansas Medical Society Executive Committee this morning.

We have neglected too long an effective utilization program that avoids unfavorably impacting the quality of health care. Our efforts have been directed at placing the blame rather than sitting down together with physicians, hospitals, subscribers, and Blue Cross-Blue Shield of Kansas and working out a



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suitable solution to the problem.

Without the cooperation of providers and subscribers in resolving this problem, our private sector medical care system is in serious jeopardy. Others will provide a solution not to our liking if we don't act now.

We look forward to meeting with you and discussing the details.

## Address by Fletcher Bell — Commissioner of Insurance, State of Kansas

I am indeed pleased to be here with you and to have the opportunity to address the medical community. As you know, my office is charged with administering the Health Care Stabilization Fund, which provides all of you with unlimited malpractice insurance coverage. In the course of carrying out those duties, I have seen a great number of cases come across my desk in the last few years. Reflecting back on these cases as I prepared to appear here, I thought to myself — "If I'm going to be surrounded by that many doctors, I'd better bring my lawyer along!"

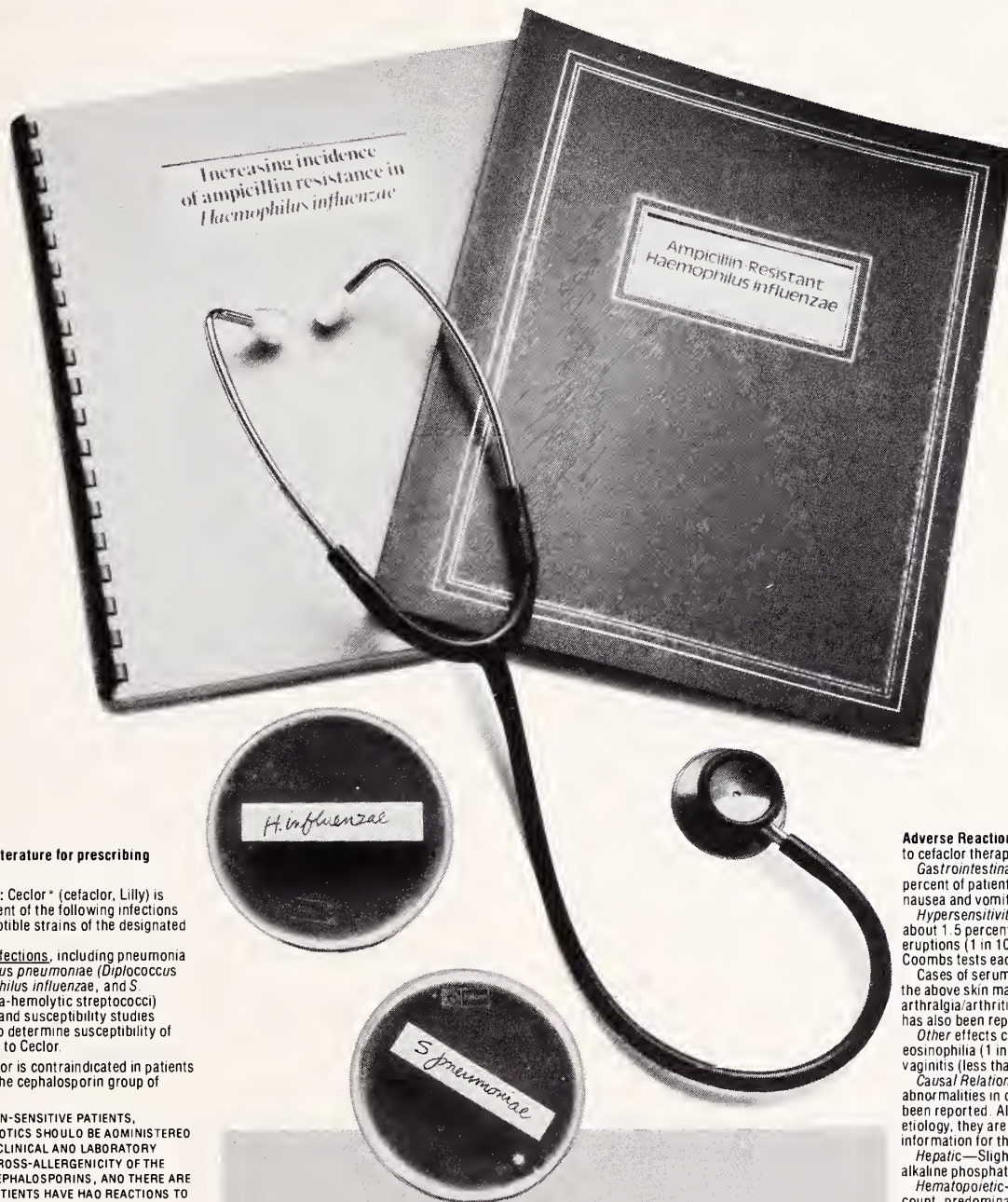
But seriously, I do hope a number of you have had the opportunity to meet my chief attorney, Derek Shafer. It's best that you meet him today because I try not to let him out of his cage too often. Derek really is a fine attorney who does an excellent job supervising our legal staff. I just thank the Lord the Stabilization Fund doesn't cover attorneys also. Actually, I have nothing against attorneys — I've accepted the proposition that they are a necessary evil. Or is that necessarily evil?

In any event, I would like to discuss with you the relationship between the Kansas Insurance Department and the medical profession established by passage of the Health Care Provider Insurance Availability Act. The primary purpose of the Act was to maintain the availability of professional liability coverage for Kansas health care providers. The need to maintain the availability of coverage was, of course, accentuated by the requirement that *all* health care providers, as defined, purchase a policy of professional liability insurance with limits of \$100,000 per occurrence/\$300,000 per year aggregate for all claims.

The change effected by the Act that had the greatest impact upon the availability of coverage was the requirement that newly issued policies cover prior acts, which encouraged the switch from occurrence based to claims-made policies. The use of claims-made policies gives the insurer greater risk control than possible with occurrence based policies. As I'm sure you all know, occurrence policies that



# An added complication... in the treatment of bacterial bronchitis\*



**Brief Summary.** Consult the package literature for prescribing information.

**Indications and Usage:** Cefclor\* (cefclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cefclor.

**Contraindication:** Cefclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

**Warnings:** IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS TO BOTH DRUG CLASSES (INCLUDING ANAPHYLAXIS AFTER PARENTERAL USE).

Antibiotics, including Cefclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

**Precautions:** If an allergic reaction to cefclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of cefclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs test may be due to the drug.

Cefclor should be administered with caution in the presence of markedly impaired renal function. Under such a condition, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Cefclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinistest\* tablets but not with Tes-Tape\* (Glucose Enzymatic Test Strip, USP, Lilly).

**Usage in Pregnancy**—Although no teratogenic or antifertility effects were seen in reproduction studies in mice and rats receiving up to 12 times the maximum human dose or in ferrets given three times the maximum human dose, the safety of this drug for use in human pregnancy has not been established. The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus.

**Usage in Infancy**—Safety of this product for use in infants less than one month of age has not been established.

**Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis\*—are sensitive to treatment with Cefclor.<sup>1-6</sup>**

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Cefclor.<sup>7</sup>

# Cefclor®

## cefclor

Pulvules®, 250 and 500 mg

**Adverse Reactions:** Adverse effects considered related to cefclor therapy are uncommon and are listed below. *Gastrointestinal* symptoms occur in about 2-5 percent of patients and include diarrhea (1 in 70) and nausea and vomiting (1 in 90).

*Hypersensitivity* reactions have been reported in about 1-5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions, including the above skin manifestations, fever, and arthralgia/arthritis, have been reported. Anaphylaxis has also been reported.

*Other* effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

*Causal Relationship Uncertain*—Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

*Hepatic*—Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

*Hematopoietic*—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

*Renal*—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200). [103080R]

\*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.<sup>8</sup>

**Note:** Cefclor\* (cefclor) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

#### References

1. Antimicrob. Agents Chemother., 8:91, 1975.
2. Antimicrob. Agents Chemother., 11:470, 1977.
3. Antimicrob. Agents Chemother., 13:584, 1978.
4. Antimicrob. Agents Chemother., 12:490, 1977.
5. Current Chemotherapy (edited by W. Siegenthaler and R. Luthy), II: 880. Washington, D.C.: American Society for Microbiology, 1978.
6. Antimicrob. Agents Chemother., 13:861, 1978.
7. Data on file, Eli Lilly and Company.
8. Principles and Practice of Infectious Diseases (edited by G. L. Mandell, R. G. Douglas, Jr., and J. E. Bennett), p. 487. New York: John Wiley & Sons, 1979.



Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285. Eli Lilly Industries, Inc., Carolina, Puerto Rico 00630



you purchased years ago continue to provide coverage for claims arising out of negligent acts committed during the period of time the policy was in force. The insurer is thus forever locked into the risk of loss for those years and cannot terminate that risk. Under the claims-made policy, even though the so-called "longtail" of claims arising out of prior acts increases every year, the insurer can control the risk by terminating coverage on a health care provider who may have an inordinate number of claims and the possibility for a great number of future claims.

Those health care providers who are terminated, or for whatever reason cannot obtain coverage in the normal market, are then eligible for coverage from the Health Care Provider Insurance Availability Plan, which I will refer to as "the Plan," currently serviced by the Western Insurance Companies of Fort Scott, Kansas. The existence of this "secondary market" allows the private carriers to freely select risks according to their own underwriting criteria while assuring that all health care providers can obtain the necessary coverage.

These changes in the medical professional liability arena have served us well in maintaining the availability of coverage in Kansas. There has been no significant change in the market from the standpoint of availability since passage of the Act in 1976. It thus appears that we were successful in stemming the tide of a rapid decrease in the availability of coverage which was spreading throughout the country in the early 1970s. Furthermore, rates for the required basic coverage have remained relatively stable since 1976. Those increases that have been granted are moderate and are based on trends that show an increased frequency of losses and a steady increase in the severity of those losses, rather than the large rate increases seen prior to 1976.

The increased frequency and severity of losses brings me to my next major area of discussion, the financial condition of the Health Care Stabilization Fund administered by my office. This Fund is accumulated by the levy of a surcharge added to your professional liability premium. Current law provides that the surcharge shall be at the level required to maintain a cash balance of \$10 million in the Fund. As you are all no doubt aware, no surcharge was levied for Fiscal Year 1981, with the exception of a 25 per cent surcharge on those health care providers who were complying with the law for the first time. As of December 31, 1980, the surcharges together with interest income and underwriting profit transferred from the Plan, had accumulated a balance of almost \$13.5 million.

No doubt many of you are thinking — \$13 million — why, we will never have to pay a surcharge again. It is my task to advise you otherwise. While \$13 million is, at least to me, an extraordinary sum of money, it is easily exceeded by the potential claims outstanding against health care providers and the Fund.

Let's look for a minute at the claims that have been paid from the Fund to date. Of the eight claims paid from the Fund, four have been what I term "major" claims requiring a contribution from the Fund of more than \$100,000. Remember that the Fund payment is *in addition* to the \$100,000 limit of the policies of one or more health care providers. In 1976, we contributed \$137,500 to payment of a claim in which a schoolteacher was partially paralyzed and suffered permanent brain damage when air was allowed to enter his circulatory system through a heart by-pass pump. In 1979, we contributed \$200,000 to settle a case in which a student nurse anesthetist ignored the instructions of the attending anesthesiologist and administered an overdose of Halothane to a small child during a "routine" tonsillectomy. The child suffered permanent brain damage.

In 1980, we contributed \$225,000 to settle a claim brought on behalf of a small child who was left almost totally deaf and severely retarded due to a failure to timely diagnose meningitis. Already in this year, we have contributed \$200,000 in settlement of a wrongful death claim brought about by a hospital employee inadvertently turning a stopcock on a blood pressure monitor and pumping air directly into the patient's vein.

The total loss expense of the Fund since 1976 equals approximately \$606,000, with attorneys' fees approaching \$150,000. While this total of less than one million dollars in losses and expenses during five years might lead you to believe that the current Fund balances are more than adequate, we believe that future losses will require re-imposing a surcharge within the near future.

To illustrate my point, let me discuss with you some of the claims that are currently pending and approaching resolution, either by settlement or jury verdict. We have five cases on file involving varying degrees of brain damage resulting from birth related injuries. These claims will likely cost the Fund a minimum of \$250,000 each. I have been advised by a number of highly respected defense attorneys that certain of these claims could result in jury verdicts in excess of \$2 million. We have seen *settlements* in claims that did not involve the Fund that are in

excess of \$1 million. In times such as these where salaries of \$15,000 to \$25,000 are common, the economic loss in a wrongful death case of a middle aged wage earner can easily approach \$250,000 or more.

Another factor that will steadily increase the exposure of the Fund is the inevitable increase in the number of inactive health care providers — those health care providers who retire, die, or move out of the state. The increase in inactive health care providers will increase not only the loss payments from the Fund as we become liable on a first dollar basis, but will also increase the expenses for attorney fees to meet the requirement of providing a defense for the inactive health care provider. I'll have more to say about inactive health care providers in a few minutes.

A further drain on the assets of the Fund will come about due to the ever increasing adverse selection of risks insured by the Plan — a process that is not unique to the health care provider plan, but is inherent in any residual market that is required to issue coverage to those individuals who have been rejected by the normal market. As I indicated earlier, by operating on a claims made basis, insurers can spot a "bad risk" and terminate that risk prior to the bringing of a number of potential claims. Eventually, these bad risks will be unable to obtain coverage in the normal market and will have to turn to the Plan. The financial drain upon the assets of the Fund occurs because the Plan is designed to operate on a "no profit — no loss" basis. Any excess in premiums over losses is paid to the Health Care Stabilization Fund. Likewise, if losses exceed premium, those losses will be made up from the Fund. Through Fiscal Year 1981, the Plan had transferred about \$1.1 million in "profit" to the Fund. We can expect a loss of such income to the Health Care Stabilization Fund as the adverse selection process continues, with an eventual depletion of Fund monies to cover losses of the Plan.

I hope that you can now all see that the \$13 million, which seemed so substantial as I began, may well dissipate as rapidly as it was accumulated. This is not to say that the Health Care Stabilization Fund is on the verge of insolvency. We believe that through continued careful management of the Fund we can continue to have adequate monies to pay all claims that may arise. To do so may well require some minor legislative changes, however, such as increasing the maximum balance limit of the Fund, clarifying that adjudicated losses can be deducted for purposes of surcharge calculation even though such

losses will not be paid for several years and, if necessary, a transition to a full accrual based accounting system, establishing both current and incurred but not reported loss reserves.

Let me remind you that the Health Care Stabilization Fund and the Health Care Provider Insurance Plan are "self-funded" insurance mechanisms. By that I mean, all of the monies to pay for losses is accumulated through charges made to those persons who are responsible for the loss — the health care providers of this state. You and you alone can control the losses of the Fund, and by controlling losses, control the surcharge level. Every effort that you can make to increase the proficiency of practitioners in this state is to your individual benefit. Increased peer review activities, stronger licensing requirements, increased continuing education, and most importantly, increased personal evaluation of your own individual professional activities, can help to avoid many malpractice claims and reduce your insurance costs. I urge you to constantly guard against falling into a "routine" or failing to prepare yourself mentally for what many consider to be a "routine" surgical procedure, because this is where many of the serious and costly claims arise.

If, as expected, losses continue to rise and the Fund balances decrease, it will fall upon you — the health care providers of this state — to bear the burden of additional surcharges which will be assessed in future years. I ask only that before you call my office to complain about the level of the surcharge, you attempt to buy *unlimited* malpractice coverage in the normal market at *any* price. I guarantee you, you'll never find it. Have you looked recently as to what the charge for coverage is in New York?

Finally, I would like to spend a few minutes to discuss with you some procedural matters affecting your relationship with the Fund. As you all should know, you are required to maintain a policy of professional liability insurance and included in your premium can be a surcharge to support the Fund. If you have continuously maintained the required coverage through an insurer authorized to do business in Kansas, the Fund will provide you with *unlimited* excess coverage over your limits of \$100,000 per claim and \$300,000 per year. If you cease to render professional services within this state, you may cancel your professional liability policy and become an inactive health care provider, at which time the Fund will become responsible for any claims made against you that arose out of your Kansas practice. The Fund will provide you with a



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defense to the claim and will pay any necessary settlement or judgment, regardless of the amount.

What should you do if you are sued or a claim is otherwise made against you? The first thing is, of course, to contact your insurance carrier at the first inkling that a claim might be made. With policies written on a claims made basis, it is very important that you report your claims in a timely manner to determine which policy period provides the appropriate coverage. If you wish, you may contact your insurer orally, but you should *always* give notice of claims or possible claims *in writing*. If you are an inactive health care provider, you should immediately notify my office just as you would an insurance company. The claim will be investigated and appropriate action taken, either by my in-office legal staff or by an attorney in private practice appointed to defend you. You will be expected to cooperate *fully* with your defense by providing records, attending depositions, analyzing expert opinions of the plaintiff's witnesses, and other necessary tasks.

If you follow these simple requirements, you should never be exposed to any financial obligations above your insurance premiums, except for any *punitive* damages which might be assessed against you. Punitive damages are awarded to punish the tortfeasor for grossly negligent or willful acts. They are not covered by your insurance policy or by the Health Care Stabilization Fund. However, I can tell you that punitive damages have never been awarded in a medical malpractice case in Kansas even though other states, such as Missouri, have upheld such awards. Let me further remind you that the law requires you to maintain a policy of basic coverage as a *condition precedent* to rendering professional services in Kansas — there is no exception for the semi-retired doctor or a doctor who only occasionally engages in active patient treatment. If you are rendering professional services, you must have a policy of insurance. Unfortunately, the phrase “rendering professional services” is not defined in the law and is poorly defined in most insurance policies. Suffice it to say that most insurers interpret

the phrase very broadly, as do the courts when insurers attempt to avoid liability by claiming a given act not to be professional services. I cannot give you a hard and fast definition of the phrase, and would urge you to be very careful about what you do once you have retired and cancelled your professional liability coverage. If it is eventually determined that you have rendered professional services in Kansas without maintaining coverage, you will become personally liable for any damages that may be assessed against you, and for the enormous cost on defending the claims.

In closing, I would invite you to call the Insurance Department at any time you have a question about your professional liability coverage, your status as an inactive health care provider, or any other question. We have brochures available that explain the Health Care Provider Insurance Availability Act and can answer many of your questions. These may be obtained by writing or calling the Department.

### **Report on Health Care Provider Insurance Availability Act**

February 11, 1981

#### **Section I — Introduction**

Since the effective date of the Kansas Health Care Provider Insurance Availability Act on July 1, 1976,

this department has issued five reports regarding the implementation and administration of the Act. These reports were issued on January 28, 1977; October 4, 1977; January 16, 1978; September 7, 1978; and March 18, 1980. Copies of these past reports are available from the Department upon request.

This report provides a brief synopsis of the Health Care Stabilization Fund activities, the Health Care Provider Insurance Availability Plan, and medical malpractice closed claims information.

#### **Section II — The Health Care Stabilization Fund**

In accordance with the provisions of the Health Care Provider Insurance Availability Act, the Health Care Stabilization Fund was established for the purpose of paying damages for personal injury or death arising out of the rendering, or failure to render, professional services by a health care provider who has complied with the basic coverage requirements of the Act. The Fund is administered by the commissioner and the following annual Fund surcharges have been levied:

<u>Fiscal Year</u>	<u>HCSF Surcharge Percentage</u>	<u>Ending Fiscal Year HCSF Balance</u>
1977	45%	\$ 2,555,055
1978	45%	\$ 6,224,939
1979	40%	\$ 9,253,570
1980	15%	\$ 12,331,606
1981 (current)	0%	\$ 13,443,236*

\* As of 12-31-80

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As of December 31, 1980, there were 165 open claim files being monitored by the Department. While open claim files are difficult to evaluate with regard to potential loss payments from the Fund, it is estimated that only 25 per cent of those claims will require some loss or expense payment from the Fund. The following charts and graphs present an overview of the HCSF's operations since the inception of the HCPIA Act.

TABLE 1  
HEALTH CARE STABILIZATION FUND  
LOSS AND EXPENSE PAYMENTS  
(As of December 31, 1980)

Claim File Number	Loss	HCSF Payments Expense	Total	Date Claim Closed	Type of HCP
0	\$137,500	\$ 9,413	\$146,913	2/22/77	Medical Doctor
12	3,336	35	3,371	9/26/78	Medical Doctor
15	750	672	1,422	6/19/79	Medical Doctor
40	200,352	2,727	203,079	3/30/79	Medical Doctor and CRNA
109	8,500	48	8,548	7/21/80	Podiatrist
48	255,047	9,905	264,952	9/11/80	Medical Doctor
75	650	873	1,523	10/29/80	Medical Doctor
	\$606,135	\$23,673	\$629,808		

TABLE 2  
HEALTH CARE STABILIZATION FUND  
CLAIM FILES OPENED AND CLOSED  
(As of December 31, 1980)

Fiscal Year	Opened	Closed	Files Opened as of the end of each FY
1977	1	0	1
1978	5	2	4
1979	64	6	62
1980	81	17	126
7-1-80 to 12-31-80	49	11	164 as of 12/31/80

GRAPH 1  
GROWTH OF HEALTH CARE STABILIZATION FUND  
(As of December 31, 1980)

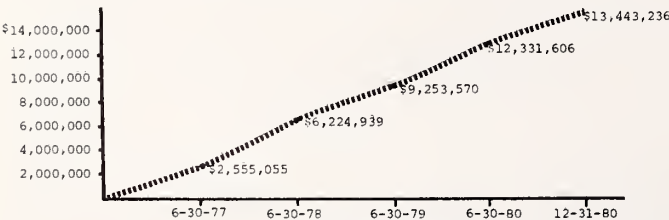


TABLE 3  
STATUS OF HEALTH CARE STABILIZATION FUND  
CUMULATIVE FROM JULY 1, 1976 THROUGH DECEMBER 31, 1980

HCSF Receipts:	
Surcharge Payments Collected	\$ 11,108,179.36
Investment Income	\$ 2,215,552.23
HCPIA Plan Income	\$ 1,093,642.40
Reimbursements	\$ 52.94
Total Receipts	\$ 14,417,426.93
HCSF Expenditures:	
Claim Payments	\$ 605,298.72
Attorney Fees (Claim Expenses)	\$ 146,926.41
Data Processing & Actuarial Services	\$ 47,321.82
Salaries & Wages	\$ 25,201.00
Return Adjustments	\$ 149,442.73
HEALTH CARE STABILIZATION FUND BALANCE	\$ 13,443,236.25

GRAPH 2  
COMPARISON OF HCSF SURCHARGE  
PAYMENTS BY TYPE OF  
HEALTH CARE PROVIDER  
(JULY 1, 1976 THROUGH DECEMBER 31, 1980)

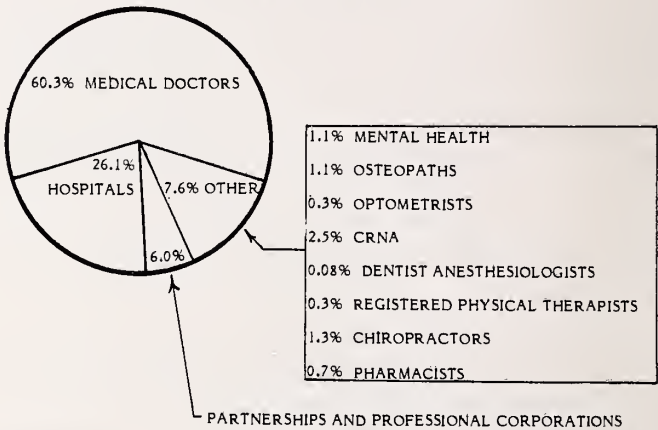


TABLE 4  
HEALTH CARE PROVIDER COMPLIANCE  
As of December 31, 1980

Type of Health Care Provider	Number in Non-Compliance		
	Number in Compliance	Number who were in Compliance at Some Time*	HCPs which have Never Been in Compliance**
Physicians, Surgeons (including Post Graduate)	2,820	2,111	588
Osteopaths	158	79	52
Chiropractors	383	191	16
Podiatrists	62	12	4
Physical Therapists	269	224	105
DDS Anesthesiologists (Certified by Board of Healing Arts)	3	0	1
Medical Care Facilities	97	50	5
Mental Care Facilities	28	16	1
Pharmacists	1,389	666	502
Optometrists	198	110	11
Certified Registered Nurse Anesthetists	191	154	42
Professional Corporations of HCP's	511	149	21
Partnerships of HCP's	91	65	7

\* This column may include health care providers who have renewed the basic coverage, but the renewal notice had not yet been received by this department; inactive health care providers no longer required to maintain the basic coverage; or active health care providers who are no longer complying with the HCPIA Act.  
\*\* These health care providers may be residents of other states; inactive health care providers; or active health care providers who have not complied with the HCPIA Act.

### Section III — The Kansas Health Care Provider Insurance Availability Plan

The Health Care Provider Insurance Availability Plan (sometimes referred to as the Kansas JUA) was established in accordance with the provisions of the Health Care Provider Insurance Availability act to provide professional liability insurance for health care providers who are in good faith entitled to such

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insurance but are unable to procure the required basic professional liability insurance from the normal markets.

The plan is administrated on a "no-profit/no loss" basis by a nine member Board of Governors, who are appointed by the commissioner. Insurance policies are issued and serviced by the Western Casualty and Surety Company of Fort Scott, Kansas.

Statutory authorization for the HCPIA Plan initially was to expire on July 1, 1978; however, subsequent legislation extended the HCPIA Plan's authorization to July 1, 1982.

### Section IV — Kansas Medical Malpractice Closed Claims Summary, February 11, 1981

This report summarizes the data submitted by 31 insurers in accordance with K.S.A. 40-1126 and K.S.A. 40-1127. There were 1,293 claims closed against Kansas health care providers during the five year period beginning January 1976 and ending December 1980.

Total indemnity paid during this period was \$8,856,633. Of the total claims closed, 51.2 per cent resulted in payments. The average indemnity paid, based on claims closed with payment, was \$6,514 in

TABLE 5  
SUMMARIZATION OF THE HCPIA PLAN'S POLICIES ISSUED  
TO HEALTH CARE PROVIDERS

Type of Health Care Provider	As of June 30, 1980	As of June 30, 1978	As of June 30, 1977
Physicians, Surgeons (includes Osteopaths)	373	431	398
Chiropractors	330	271	269
Podiatrists	51	40	36
Physical Therapists	2	12	14
DDS Anesth. (Certified by Board of Healing Arts)	----	----	----
Medical Care Facilities	5	11	10
Mental Care Facilities	6	6	----
Pharmacists	55	64	56
Optometrists	18	15	16
Certified Reg. Nurse Anesthetists	83	81	69
Partnerships & Prof. Corp. of HCP's	100	76	----
Clinics	2	----	----

TABLE 6  
SUMMARIZATION OF THE HCPIA PLAN'S OPERATIONS

	FY 1980	FY 1979	FY 1978	FY 1977
1. Earned Premiums	\$1,183,156	\$1,414,784	\$1,311,442	\$ 736,377
2. Incurred Losses & Loss Reserves	501,308	715,288	277,568	166,534
3. Excess of Earned Premiums*	285,349	103,184	565,240	139,869

\*The total HCPIA Plan "profits" transferred to the Health Care Stabilization Fund since July 1, 1976 is \$1,093,642

1976 and \$14,384 in 1980, an increase of 120 per cent. The greatest portion of this increase is attributed to the year 1977 where the average payment rose 161 per cent over the prior year. The figure then dropped in 1978 and has risen less dramatically in the past two years. These figures are presented on *Graph I*.

The National Association of Insurance Commissioners completed a study of Medical Malpractice claims consisting of 71,782 claims closed between July 1975 and December 1978. "Between 1975 and 1978, the average award per injury increased 70 per cent with inflation accounting for 28 per cent of the increase." The NAIC also reports: "A major factor contributing to the growth of indemnity was the increase in large settlements or judgments. Indemnity payments of \$50,000 or more increased as a percentage of all reported incidents from 13 per cent in 1975 to 20 per cent in 1978."

CHART I  
Distribution of Company Costs By Percentage  
of Total Costs for all Closed Claims  
During Indicated Years

	1976	1977	1978	1979	1980
I. Defense Costs	24%	19%	24%	24%	21%
II. Other Costs (includes loss adj., interest, company expenses)	9%	13%	4%	4%	3%
III. Indemnity Paid	67%	68%	72%	72%	76%
Actual Total Costs (I,II,III)	\$ 867,769	\$3,457,490	\$2,806,845	\$2,950,809	\$2,305,472

CHART II  
Distribution of Claims by Range of Indemnity  
Payment By Percentage of Total Claims

Amount of Payment	1976	1977	1978	1979	1980
No Payment	57.5%	51.1%	46.6%	48.3%	40.2%
\$1-\$9,999	32.9%	33.4%	36.2%	37.0%	40.7%
\$10,000-\$19,999	4.8%	5.6%	8.1%	6.3%	10.3%
\$20,000-\$29,999	1.4%	1.8%	2.7%	2.3%	4.9%
\$30,000-\$39,999	0	.7%	2.7%	1.0%	.5%
\$40,000-\$49,999	0	1.4%	.3%	.7%	.5%
\$50,000-\$59,999	.5%	1.4%	.3%	1.3%	.5%
\$60,000-\$69,999	.5%	.7%	0%	0%	0%
\$70,000-\$79,999	0%	1.8%	1.3%	.3%	0%
\$80,000-\$89,999	0%	.4%	0%	0%	0%
\$90,000-\$99,999	0%	.4%	0%	0%	0%
Over \$100,000	2.4%	1.0%	1.7%	2.7%	2.5%
TOTAL	100%	100%	100%	100%	100%
# of Claims	207	284	298	300	204

GRAPH I  
Severity of Claim Payments  
(not Including Defense and Other Costs)

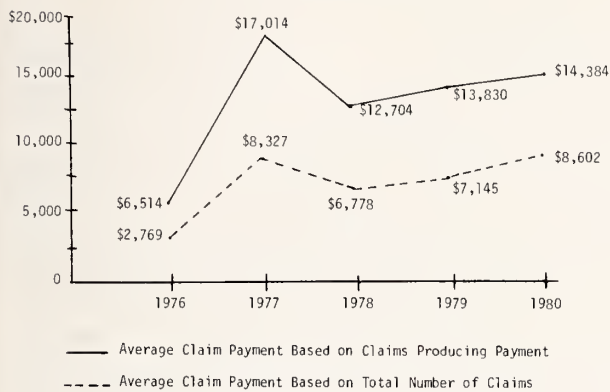


Chart V  
Distribution of Total Company Costs  
and Total Claims by Type of Alleged Injury  
(July 1978 through December 1980)

Type of Injury	# Claims	% Total Claims	Total Costs	% Total Costs
Surgery	125	19.4%	\$1,335,933	19.2%
Incorrect Diagnosis	77	12.0%	1,235,082	17.7%
Improper Hospital Care	73	11.4%	359,697	5.2%
Birth Related	57	8.9%	1,711,759	24.6%
Falls	45	7.0%	101,722	1.5%
Dental	40	6.2%	135,896	1.9%
Prescription Error	29	4.5%	260,653	3.7%
Birth Control, Abortions	23	3.6%	110,441	1.6%
Illness from Drugs	21	3.3%	127,757	1.8%
Hysterectomy	20	3.1%	167,689	2.4%
Personal Injury	20	3.1%	39,279	.6%
Miscellaneous	18	2.8%	205,515	2.9%
Post-Op Infection	16	2.5%	304,578	4.4%
Doctor's Advise	14	2.2%	80,463	1.2%
X-Ray Therapy	13	2.0%	50,165	.7%
Anesthesiology	12	1.9%	408,345	5.9%
Vasectomy	9	1.4%	68,905	1.0%
Improper Consent	9	1.4%	48,480	.7%
Physical Therapy	8	1.2%	27,215	.4%
Psychiatric	8	1.2%	86,340	1.2%
Optometry	6	.9%	102,454	1.5%
<b>TOTAL</b>	<b>643</b>	<b>100%</b>	<b>\$6,968,368</b>	<b>100%</b>

CHART III  
Date of Incident to Date of Claim Filed

Years	1976	1977	1978	1979	1980
Over 6	3.4%	1.8%	4.7%	2.3%	2.0%
5 to 6	.5%	.4%	1.3%	4.3%	1.5%
4 to 5	.5%	2.1%	3.4%	3.7%	2.9%
3 to 4	.5%	.7%	5.4%	5.7%	5.9%
2 to 3	2.4%	8.8%	13.7%	23.7%	25.5%
1 to 2	30.4%	29.9%	27.2%	29.3%	27.5%
Under 1	62.3%	56.3%	44.3%	31.0%	34.8%

CHART IV  
Distribution of Total Costs and Total  
Claims by Type of Insured  
(July 1978 through December 1980)

Types of Insured	# Claims	% Total Claims	Total Costs	% Total Costs
<b>*Physicians &amp; Surgeons</b>				
Group I	46	7.2%	\$ 559,092	8.0%
Group II	87	13.5%	855,591	12.3%
Group III	45	7.0%	747,573	10.7%
Group IV	98	15.2%	1,100,746	15.8%
Group V	31	4.8%	315,280	4.5%
Group VI	12	1.9%	301,436	4.3%
Subtotal	319	49.6%	\$3,879,718	55.6%
Hospitals	187	29.0%	1,334,915	19.2%
Clinics	5	.8%	83,346	1.2%
Mental Health Centers	6	.9%	35,141	.5%
Subtotal	198	30.7%	\$1,453,002	20.9%
Dentists	41	6.4%	163,550	2.4%
Chiropractors	4	.6%	25,869	.4%
Podiatrists	2	.3%	44,345	.6%
Physical Therapists	1	.2%	100,000	1.4%
Nurses	10	1.6%	28,736	.4%
Pharmacists	13	2.0%	82,477	1.2%
Optometrists	1	.2%	300	0%
Prof./Corps./Partnerships	56	8.4%	1,189,971	17.1%
Subtotal	126	19.7%	\$1,635,248	23.5%
<b>TOTAL</b>	<b>643</b>	<b>100%</b>	<b>\$6,968,368</b>	<b>100%</b>

\*Physicians and Surgeons Grouped as Follows:

Group I -	No Surgery Physicians - No Surgery, Psychiatry, Pulmonary Diseases, Family Practice
Group II -	No Major Surgery General Practitioners or Specialists Performing Acupuncture, Ateriography, Catheterization, Radiation Therapy, Shock Therapy, Geriatrics, Pediatrics, Family Practice
Group III -	No Major Surgery General Practitioners or Specialists Performing Colonoscopy, Laparoscopy, Needle Biopsy, Broncho-Esophagology, Emergency Medicine
Group IV -	Surgery Obstetrics-Gynecology, Emergency Medicine, Abdominal, Hand, Neck
Group V -	Surgery
Group VI -	Anesthesiology General Practitioners or Specialists Performing General Anesthesia or Acupuncture Anesthesia (Not Nurse Anesthetists)

The data compiled in Kansas, however, does not show a similar trend in large payments of \$50,000 or more. The claims producing payments of \$10,000 to \$40,000 appear to be increasing by the greatest percentages. *Chart II* provides a distribution of claims by dollar amount paid in indemnity for each of the five years compiled. This chart also demonstrates that on a percentage basis, fewer claims are being closed without payments.

The Kansas claims information indicates that the length of time between the date of an incident to the date a claim or legal action is filed, often referred to as the "tail" in Medical Malpractice, has lengthened during the past five years. In 1976, 62.3 per cent of claims were reported within the first 12 months after the date of incident. In 1980, only 34.8 per cent of claims had been reported within one year. It does not appear, however, that the percentage of claims taking more than 6 years to report has increased. *Chart III* provides a summarization.

On a total cost basis (*i.e.*, indemnity, defense, and all other costs), the distribution is as follows: physicians/surgeons 56 per cent, medical facilities 21 per cent, others 23 per cent. The number of claims attributed to these classes was proportionately similar. Specific types of practitioners and claims costs for each are found on *Chart IV*.

By category of prodecure or type of allegation producing claims, the greatest percentage of claims was attributed to surgery related procedures. Incorrect diagnosis was the second largest category, followed by improper hospital care and birth related incidents. Although the birth related incidents were fourth in number, this category was first in total dollars spent (settlements/awards, defense costs, etc.). *Chart V* provides further detail.



## SECOND SESSION

The second session of the House of Delegates was called to order by the speaker, Clair C. Conard, M.D., at 8:00 AM on Sunday, May 10, 1981, at the Hilton Inn, Salina.

The Speaker placed some rules before the body and announced that *Sturgis Standard Code of Parliamentary Procedure* would be followed at this meeting. Every delegate would be given an opportunity to be heard on every question but except for the person who makes the motion, all delegates were asked to cooperate by being heard only once upon a single question. Today being Mother's Day, it was in the interest of all those present to proceed with the meeting expeditiously, to allow more time for the delegates to spend with their families.

The presence of a quorum was announced.

Ballots for the election of officers were distributed, and the following results reported:

PRESIDENT ELECT: Kermit G. Wedel, M.D., Minneapolis

FIRST VICE PRESIDENT: Jimmie A. Gleason, M.D., Topeka

SECOND VICE PRESIDENT: F. Calvin Bigler, M.D., Garden City

CONSTITUTIONAL SECRETARY: Jack R. Cooper, M.D., Shawnee Mission

TREASURER: William K. Walker, M.D., Sedan

AMA DELEGATE 1981/82: Clair C. Conard, M.D., Dodge City

AMA ALTERNATE DELEGATE 1982-83: Lew W. Purinton, M.D., Wichita

SPEAKER: Clair C. Conard, M.D., Dodge City

VICE SPEAKER: G. Rex Stone, M.D., Manhattan

The following results of Council district elections were announced:

District 1 — Wayne O. Wallace, Jr., M.D., Atchison

District 3 — James G. Bridgens, M.D., Shawnee Mission

District 5 — Kenneth M. Boese, M.D., Manhattan

District 8 — Newton C. Smith, M.D., Arkansas City

District 9 — Herbert D. Doubek, M.D., Belleville

District 17 — Max E. Teare, M.D., Garden City

Dr. Conard invited Dr. Herman W. Hiesterman, President, to address the House.

Dr. Hiesterman thanked the delegates for the high honor of his new office and pledged his utmost efforts to accomplish those tasks that the Kansas Medical Society needs to pursue. One year is not

enough time to resolve the more persistent problems. He therefore intends to follow through on many of the programs that were begun during the past year. In the belief that patterns which are set early in life persist, Dr. Hiesterman believes that it is vital for medical students and residents to join organized medicine early. He intends to encourage their active participation. He also sees the importance of improved communications with the nurses. He will continue to encourage active Auxiliary participation in KMS committees and activities and supports the public information project and the establishment of a speakers' bureau. The comments made by Insurance Commissioner Bell made a strong impression, and the area of professional liability will need to be addressed by the Society again with vigor.

Dr. Hiesterman then installed Dr. Conard as Speaker, and Dr. Stone as Vice Speaker of the House of Delegates for the coming year.

The Speaker thanked Dr. Frank Bichlmeier, Chairman, and all members of the Reference Committee for their efforts in summarizing all opinions on the resolutions. He thanked members for attending the session. There being no further business, the House was adjourned at 10:45 AM.

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*An asterisk following the resolution number indicates a change in the Constitution and By-laws.*

### RESOLUTION NO. 81-1

#### Impaired Physicians

WHEREAS, The Impaired Physicians Program of the Kansas Medical Society is functioning well; and

WHEREAS, An impaired physician may have sustained a significant financial burden as a result of his or her impairment; and

WHEREAS, One of the primary objectives of the Impaired Physicians Program is to be responsive to impaired physicians' needs; therefore be it

*Resolved*, That the Kansas Medical Society establish a loan fund for impaired physicians who are or have been members of the Kansas Medical Society within the last five years, which shall be established and maintained by an assessment for all full dues paying members according to the following guidelines:

1. Beginning the 1982 dues year, the assessment will be \$20; and \$10 a year each year for the next four years;

2. At the end of five years, the Council will evaluate the necessity for continuing the assessment; and be it further

*Resolved*, That the Impaired Physicians Program

be authorized to administer the fund.

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### RESOLUTION NO. 81-2\*

#### Delinquent Dues

*Resolved*, That Section 11.931 of the By-laws be deleted; and be it further

*Resolved*, That a new section 11.931 be adopted stating: Any member dropped from the membership rolls for delinquent dues shall be readmitted only after applying as a new member; provided that the Executive Committee shall be empowered to consider exceptional cases on an individual basis whether a member must pay dues for the years in which he/she became delinquent should he/she desire to renew membership in the future

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### RESOLUTION NO. 81-3

#### Medical Student and Resident Membership

WHEREAS, The Kansas Medical Society is interested in increasing medical student and resident membership; and

WHEREAS, The component medical society should be the entry point for new members; and

WHEREAS, The current By-laws provisions appear to be inconsistent for student and resident members; therefore be it

*Resolved*, That the By-laws be amended to reflect the following policy changes:

1. Eliminate the Medical Student Society and encourage membership through the component medical society.

2. Students shall pay no KMS dues. They may receive the *Journal* for one-half of the subscription price.

3. Residents shall pay \$10 KMS dues. The *Journal* subscription shall be included as a part of the dues.

4. Student and resident members shall not be counted for the purposes of determining the number of delegates.

And be it further

*Resolved*, That the KMS and the component medical societies formulate a plan to actively seek new student and resident membership.

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### RESOLUTION NO. 81-4

#### KU Medical Center

Not adopted.

### RESOLUTION NO. 81-5

#### Gerontology Professorship at University of Kansas School of Medicine

WHEREAS, The percentage of people of Kansas over the age of 65 has increased significantly; and

WHEREAS, The health care needs of persons over the age of 65 often differ significantly from those of the general population; therefore be it

*Resolved*, That the Kansas Medical Society encourage the University of Kansas School of Medicine to emphasize geriatric medicine in its medical school and residency training programs; and be it further

*Resolved*, That the University of Kansas School of Medicine continue to include geriatric medicine in its continuing medical education programs; and be it further

*Resolved*, That a copy of this resolution be forwarded to the Governor, members of the Legislature, and the Executive Vice Chancellor for the University of Kansas School of Medicine and College of Health Sciences.

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### RESOLUTION NO. 81-6

#### Standard Immunization Record Form

*Resolved*, That the Kansas State Department of Health and Environment be encouraged to adopt the Standard Immunization Form developed by the National Immunization Record Workshop as the official immunization form of Kansas.

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### RESOLUTION NO. 81-7

#### Physician's Assistant Training

WHEREAS, The Physician's Assistant training program at Wichita State University was developed to assist in providing supervised manpower for physician short areas; and

WHEREAS, There are now indications that the shortage of physicians in Kansas is slowly being alleviated; and

WHEREAS, Information continues to be passed about concerning abuse of practice privileges involving both PAs and their employers; therefore be it

*Resolved*, That the Kansas Medical Society study the present status of the PA in Kansas, as it relates to their role, utilization, and the projected need for PAs in the future; and be it further



*Resolved*, That the results of this study be presented to the KMS at its 1982 Annual Meeting and made available to the Kansas Legislature and the Department of Health and Environment.

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### RESOLUTION NO. 81-8

#### Nursing Education

WHEREAS, The Kansas Medical Society supports all forms of nursing education including baccalaureate, diploma, and associate degree programs; and

WHEREAS, There is a critical shortage of nurses currently available to provide direct patient care in hospitals and medical office settings; therefore be it

*Resolved*, That the Kansas Medical Society favor increased development of associate degree and diploma school nursing programs to provide more nurses for direct patient care in hospitals and medical offices; and be it further

*Resolved*, That a copy of this resolution be forwarded to the Governor, members of the Kansas Legislature, the Kansas State Board of Nursing, and the Kansas State Nurses Association.

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### RESOLUTION NO. 81-9

#### Advanced Registered Nurse Practitioner Regulations

WHEREAS, The permanent Advanced Registered Nurse Practitioner regulations have taken effect in spite of the continued opposition of the KMS; and

WHEREAS, These ARNP regulations are ambiguous, vague, and a blur of the distinction between physician and nurse; and

WHEREAS, The KMS believes the ARNP regulations go far beyond what the Legislature originally intended for the expanded role nurse; therefore be it

*Resolved*, That the KMS Executive Committee be directed to take appropriate legal action to prevent implementation of the permanent ARNP regulations.

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### RESOLUTION NO. 81-10

#### Health Planning — KMS Active Involvement

WHEREAS, The Kansas Department of Health and Environment and the Health Systems Agencies are developing statistics on health manpower to be utilized in facility and training program planning; and

WHEREAS, The Kansas Medical Society does not have an adequate mechanism for monitoring and

verifying these various statistics; therefore be it

*Resolved*, That the Executive Committee be directed to study the development of an aggressive, workable system for the active monitoring of the health planning system, including additional funding and staff, if necessary; and be it further

*Resolved*, That the resulting proposal be referred to the Council for appropriate action.

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### RESOLUTION NO. 81-11

#### Kansas University Medical Center

Not adopted.

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### RESOLUTION NO. 81-12

#### Home Deliveries

*Resolved*, That the Kansas Medical Society endorse the following statement on home deliveries:

Labor and delivery, while a physiologic process, clearly present potential hazards to both mother and fetus before and after birth. These hazards require standards of safety which are provided in the hospital setting and cannot be matched in the home situation.

We recognize, however, the legitimacy of the concern of many that the events surrounding birth be an emotionally satisfying experience for the family. The Kansas Medical Society supports those actions that improve the experience of the family while continuing to provide the mother and her infant with accepted standards of safety available only in the hospital.

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### RESOLUTION NO. 81-13

#### Responsibilities of the Health Care Team in Maternity Care

*Resolved*, That the Kansas Medical Society adopt the following policy statement on the responsibilities of midwifery in the health care team of maternity care:

The Kansas Medical Society reaffirms its policy that the health care team necessary to provide optimal maternity care must be directed by a qualified physician. Fully recognized in this policy is the possible role of the certified nurse-midwife who, as a member of this team, may assume responsibility for the management of an uncomplicated labor and delivery of a hospitalized pregnant woman. While recognizing the role of the certified nurse-midwife as a



# Pioneers in Medicine For the Family



## BOOTS PHARMACEUTICALS, INC.

Operating in the U.S. since 1977, Boots is a world-wide leader in pharmaceutical research and manufacture. Boots has directed its efforts toward providing products useful in the practice of family medicine.

Some of our better known products are Lopurin™, Ru-Tuss® and Ru-Vert®. This advertisement highlights four other products particularly useful for the family.

**F-E-P CREME® • SU-TON® • TWIN-K® • TWIN-K-CI™**





For the Majority of  
Steroid-Responsive Dermatoses\*  
Seen in Family Practice

## F-E-P CREME®

(Iodochlorhydroxyquin—Pramoxine HCl—Hydrocortisone)

### The 4 in 1 Corticosteroid Cream

Anti-inflammatory, antifungal, antibacterial actions, and, uniquely, a topical anesthetic for immediate relief of the itching or burning that frequently accompanies skin problems. One size (½ ounce), one strength for ease of prescription.

\*This drug has been evaluated as possibly effective for these indications.  
See prescribing information on last page of this advertisement.

For the Geriatric Patient

## SU-TON®

### Liquid Tonic

A pleasant tasting prescription tonic containing iron, vitamins, minerals, an analeptic and 18% alcohol. Ideal for those who may benefit from vitamin deficiency prevention. Just one tablespoon before each meal.

Each 45 ml (3 tablespoonfuls) contains:

Pentylentetrazol.	30 mg
Niacin.	50 mg
Vitamin B-1.	10 mg
Vitamin B-2.	5 mg
Vitamin B-6.	1 mg
Vitamin B-12.	3 mcg
Choline.	100 mg
Inositol.	50 mg
Manganese (as Manganese Sulfate).	1 mg
Magnesium (as Magnesium Sulfate).	2 mg
Zinc (as Zinc Sulfate).	1 mg
Iron (as Ferric Pyrophosphate, Soluble).	22 mg
Alcohol.	18%

See prescribing information on last page of this advertisement.





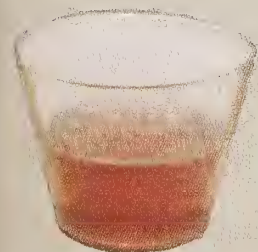
**For Potassium Supplementation  
Improved Compliance...**

**TWIN-K®**

Each 15 ml supplies 20 mEq of potassium ions as a combination of potassium gluconate and potassium citrate in a sorbitol and saccharin solution.

- The good tasting potassium supplement
- Designed for prophylactic and therapeutic use with diuretics and adrenocorticoids.
  - Pleasant taste and convenient dosage aid patient compliance.
- The organic salt of potassium can be given as a liquid without producing significant gastric symptoms and without an untoward effect on the mucosa of the small intestine.<sup>1</sup>

1. Beeson-McDermott, Textbook of Medicine, 15th Ed. 1979, W.B. Saunders Co., Philadelphia, page 1959.



**In Cases with  
Chloride Deficiency...**

**TWIN-K-Cl™**

Each 15 ml supplies 15 mEq of potassium ions and 4 mEq of chloride ions as a combination of potassium gluconate, potassium citrate, and ammonium chloride in a sorbitol and saccharin solution.

- The good tasting potassium supplement with chloride
- In hypokalemic hypochloremic alkalosis, chloride ions are required. Twin-K-Cl is specially formulated to be a good tasting chloride containing potassium supplement.
  - Contains no potassium chloride. Twin-K-Cl is a carefully balanced combination of organic potassium salts plus ammonium chloride.
  - In hypochloremic patients, potassium should be provided as the chloride salt, or chloride ion must be made available in some other form, such as ammonium chloride or sodium chloride.<sup>1</sup>

See prescribing information on last page of this advertisement.





## F-E-P CREME®

### DESCRIPTION

F-E-P Creme is a topical water soluble anti-inflammatory, anesthetic preparation intended for treatment of various inflammatory skin disorders. The drug contains the following active ingredients:

Iodochlorhydroxyquin	3.0%
Pramoxine Hydrochloride	0.5%
Hydrocortisone	1.0%

### INDICATIONS AND USAGE

Based on a review of this drug by the National Academy of Sciences-National Research Council and/or other information, FDA has classified the indications as follows: "Possibly" effective: Contact or atopic dermatitis, impetiginized eczema, nummular eczema, infantile eczema, endogenous chronic infectious dermatitis, stasis dermatitis, pyoderma, nuchal eczema and chronic eczematoid otitis externa, acne urticata, localized or disseminated neurodermatitis, lichen simplex chronicus, anogenital pruritus (vulvae, scroti, ani), folliculitis, bacterial dermatoses; mycotic dermatoses such as tinea (capitis, cruris corporis, pedis), moniliasis, intertrigo. Final classification of the less-than-effective indications requires further investigation.

Pramoxine Hydrochloride promptly relieves pain and itch. This compound may be used safely on the skin of those patients sensitive to the "caine" type local anesthetics.

### CONTRAINDICATIONS

Hypersensitivity to F-E-P Creme, or any of its ingredients or related compounds; lesions of the eye; tuberculosis of the skin, most viral skin lesions (including herpes simplex, vaccinia and varicella).

### WARNINGS

This product is not for ophthalmic use.

In the presence of systemic infections, appropriate antibiotics should be used.

### USE IN PREGNANCY

Topical steroids have not been reported to have an adverse effect on pregnancy. However, fetal abnormalities have been produced in pregnant laboratory animals that have been exposed to large doses of topical corticosteroids. Drugs of this class should not be used extensively during pregnancy.

### PRECAUTIONS

F-E-P Creme may be irritating to the skin in some patients. If irritation occurs discontinue therapy. Staining of clothes or hair may also occur with use of this preparation. Although systemic toxicity has not been reported with this drug, adrenal pituitary suppression is possible, especially when the drug is used extensively or kept under an occlusive dressing for a prolonged period.

Iodochlorhydroxyquin can be absorbed through the skin and interfere with thyroid function tests. Therapy with this preparation should stop at least a month before performance of these tests. The ferric chloride test for phenylketonuria (PKU) can be positive if F-E-P Creme is on the diaper or in the urine.

Prolonged use of this drug may result in an overgrowth of non-susceptible organisms requiring appropriate therapy.

### ADVERSE REACTIONS

Skin rash or hypersensitivity may occur following topical application.

The following local adverse reactions have been reported with topical corticosteroids, especially under occlusive dressings: burning, itching, irritation, dryness, folliculitis, hypertrichosis, acneiform eruptions, hypopigmentation, perioral dermatitis, allergic contact dermatitis, maceration of the skin, secondary infection, skin atrophy, striae, miliaria. Discontinue therapy if untoward reactions occur.

### DOSEAGE AND ADMINISTRATION

Apply a thin layer of the drug to affected parts 3-4 times daily.

### Note:

1. F-E-P Creme is distributed with 3.0% Iodochlorhydroxyquin for use when antibacterial/antifungal activity is desired.
2. F-E-P Creme (Plain) is the regular formulation, but without Iodochlorhydroxyquin.

Both of these preparations contain pramoxine hydrochloride, which has topical anesthetic properties. Pramoxine is not chemically related to benzoic acid or amide type topical anesthetics. Patients can tolerate pramoxine although they may be sensitive to other "caine" type of topical or local anesthetics.

### HOW SUPPLIED

F-E-P Creme 1/2 ounce (15 gm) tubes NDC 0524-0026-S1  
F-E-P Creme Plain 1/2 ounce (15 gm) tubes NDC 0524-0025-S1  
Federal law prohibits dispensing without a prescription.  
July 1980

## SU-TON®

### DESCRIPTION

Forty-five milliliters of SU-TON contain the following ingredients:

Pentylenetetrazol	30 mg
Niacin	50 mg
Vitamin B-1	10 mg
Vitamin B-2	5 mg
Vitamin B-6	1 mg
Vitamin B-12	3 mcg
Choline	100 mg
Inositol	50 mg
Manganese (as Manganese Sulfate)	1 mg
Magnesium (as Magnesium Sulfate)	2 mg
Zinc (as Zinc Sulfate)	1 mg
Iron (as Ferric Pyrophosphate, Soluble)	22 mg
Alcohol	18%

### INDICATIONS AND USAGE

SU-TON contains pentylenetetrazol which may be helpful in the older patient as an analeptic agent when mental confusion and memory defects are present. SU-TON also contains vitamins, trace minerals, and iron, for those patients who may benefit by preventing the development of a deficiency.

### CONTRAINDICATIONS

Epilepsy, convulsive disorders or known history of sensitivity to any of the listed active ingredients.

### WARNINGS

The safety of this preparation during pregnancy and lactation has not been established. Use of this drug requires that the physician evaluate the potential benefits of the drug against any possible hazard to the mother and child.

### PRECAUTIONS

Although there are no absolute contraindications to pentylenetetrazol, it should be used with caution in epileptic patients or those known to have a low convulsive threshold or a focal brain lesion. Caution should be exercised when treating patients with high doses of SU-TON who have heart disease. While pentylenetetrazol does not act directly on the myocardium, the results from central vagal stimulation could cause bradycardia.

### ADVERSE REACTIONS

Pentylenetetrazol in high doses may produce toxic symptoms typical of central nervous system stimulants, which act on the higher motor centers and the spinal cord. Convulsions resulting from this drug are spontaneous and are not induced by external stimuli. They usually last for several minutes and are followed by profound depression and respiratory paralysis. Death has been reported from the ingestion of 10 grams of pentylenetetrazol.

### DRUG ABUSE

Drug dependence has not been reported with SU-TON.

### OVERDOSEAGE

Signs and symptoms of acute overdose may be due principally from overstimulation of the central nervous system and from excessive vasodilation with resulting autonomic nervous system imbalance. The symptoms may include the following: vomiting, agitation, tremors, hyperreflexia, sweating, confusion, hallucinations, headache, hyperpyrexia, tachycardia. Treatment consists of appropriate supportive measures. If signs and symptoms are not too severe and the patient is conscious, gastric evacuation may be accomplished by induction of emesis or gastric lavage.

Intensive care must be provided to maintain adequate circulation and respiratory exchange.

### DOSEAGE AND ADMINISTRATION

One tablespoonful (15 ml) 3 times a day 20-30 minutes before meals. This drug is not for use in children under 12 years of age.

### HOW SUPPLIED

Bottles of 473 ml (16 fl oz) NDC 0524-0015-16  
Federal law prohibits dispensing without prescription.  
February 1980

## TWIN-K®

### DESCRIPTION

Each 15 milliliter (one tablespoonful) supplies 20 mEq of potassium ions as a combination of potassium gluconate and potassium citrate in a sorbitol and saccharin solution.

### INDICATIONS AND USAGE

For use as oral potassium therapy in the prevention or treatment of hypokalemia which may occur secondary to diuretic or corticosteroid administration. It may be used in the treatment of cardiac arrhythmias due to digitalis intoxication.

### CONTRAINDICATIONS

Severe renal impairment with oliguria or azotemia, untreated Addison's disease, adynamia episodica hereditaria, acute dehydration, heat cramps and hyperkalemia from any cause. This product should not be used in patients receiving aldosterone antagonists or triamterene.

### WARNINGS

TWIN-K (potassium gluconate and potassium citrate) is a palatable form of oral potassium replacement. It appears that little if any potassium gluconate-citrate penetrates as far as the jejunum or ileum where enter coated potassium chloride lesions have been noted. Excessive, undiluted doses of TWIN-K may cause a saline laxative effect.

To minimize gastrointestinal irritation, it is recommended that TWIN-K be taken with meals or diluted with water or fruit juice. A tablespoonful (15 ml) in 8 ounces of water is approximately isotonic. More than a single tablespoonful should not be taken without prior dilution.

### PRECAUTIONS

Potassium is a major intracellular cation which plays a significant role in body physiology. The serum level of potassium is normally 3.8-5.0 mEq/liter. While the serum or plasma level is a poor indicator of total body stores, a plasma or serum level below 3.5 mEq/liter is considered to be indicative of hypokalemia.

The most common cause of hypokalemia is excessive loss of potassium in the urine. However, hypokalemia can also occur with vomiting, gastric drainage and diarrhea.

Usually a potassium deficiency can be corrected by oral administration of potassium supplements. With normal kidney function, it is difficult to produce potassium intoxication by oral administration. However, potassium supplements must be administered with caution since, usually, the exact amount of the deficiency is not accurately known. Checks on the patient's clinical status and periodic EKG and/or serum potassium levels should be made. High serum potassium levels may cause death by cardiac depression, arrhythmias or arrest.

In patients with hypokalemia who also have alkalosis and a chloride deficiency (hypokalemic hypochloremic alkalosis), there will be a requirement for chloride ions. TWIN-K is not recommended for use in these patients.

### ADVERSE REACTIONS

Symptoms of potassium intoxication include paresthesias of the extremities, flaccid paralysis, listlessness, mental confusion, weakness and heaviness of the legs, fall in blood pressure, cardiac arrhythmias and heart block. Hyperkalemia may exhibit the following electrocardiographic abnormalities: disappearance of the P wave, widening and slurring of the QRS complex, changes of the ST segment and tall peaked T waves.

TWIN-K taken on an empty stomach in undiluted doses larger than 30 ml can produce gastric irritation with nausea, vomiting, diarrhea, and abdominal discomfort.

### OVERDOSEAGE

The administration of oral potassium supplements to persons with normal kidney function rarely causes serious hyperkalemia. However, if the renal excretory function is impaired, potentially fatal hyperkalemia can result. It is important to note that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration with or without EKG changes. Treatment measures include:

1. Elimination of potassium containing drugs or foods.
2. Intravenous administration of 300 to 500 ml/hr of a 10% dextrose solution containing 10-20 units of crystalline insulin per 1000 milliliters.
3. Correction of acidosis.
4. Use of exchange resins or peritoneal dialysis.

In treating hyperkalemia, it should be noted that patients stabilized on digitalis can develop digitalis toxicity when the serum potassium concentration is changed too rapidly.

### DOSEAGE AND ADMINISTRATION

The usual adult dosage is one tablespoonful (15 ml) in 6-8 fluid ounces of water or fruit juice, two to four times a day. This will supply 40 to 80 mEq of potassium ions. The usual preventative dose of potassium is 20 mEq per day while therapeutic doses range from 30 mEq to 100 mEq per day. Because of the potential for gastrointestinal irritation, undiluted large single doses (30 ml or more) of TWIN-K are to be avoided.

Deviations from this schedule may be indicated, since no average total daily dose can be defined, but must be governed by close observation for clinical effects.

### HOW SUPPLIED

Bottles of 1 pint (16 fl oz)

NDC 0524-0021-16

### CAUTION

Federal law prohibits dispensing without prescription.  
July 1980

## TWIN-K-CI™

### DESCRIPTION

Each 15 ml (one tablespoonful) supplies 15 mEq of potassium ions and 4 mEq of chloride ions as a combination of potassium gluconate, potassium citrate, and ammonium chloride, in a sorbitol and saccharin solution.

### INDICATIONS

For use as oral potassium therapy in the prevention or treatment of hypokalemia which may occur secondary to diuretic or corticosteroid administration. It may be used in the treatment of cardiac arrhythmias due to digitalis intoxication.

Potassium and chloride are usually the salts of choice in the treatment of hypokalemia since chloride and potassium deficiencies are likely to be associated with each other.

### CONTRAINDICATIONS

Severe renal impairment with oliguria or azotemia, untreated Addison's disease, adynamia episodica hereditaria, acute dehydration, heat cramps and hyperkalemia from any cause. This product should not be used in patients receiving aldosterone antagonists or triamterene.

### WARNINGS

TWIN-K-CI is a palatable form of oral potassium replacement. Excessive, undiluted doses of TWIN-K-CI may cause a saline laxative effect.

To minimize gastrointestinal irritation, it is recommended that TWIN-K-CI be taken with meals or diluted with water or fruit juice. A tablespoonful (15 ml) in 8 ounces of water is approximately isotonic. More than a single tablespoonful should not be taken without prior dilution.

### PRECAUTIONS

Potassium is a major intracellular cation which plays a significant role in body physiology. The serum level of potassium is normally 3.8-5.0 mEq/liter. While the serum or plasma level is a poor indicator of total body stores, a plasma or serum level below 3.5 mEq/liter is considered to be indicative of hypokalemia.

The most common cause of hypokalemia is excessive loss of potassium in the urine. However, hypokalemia can also occur with vomiting, gastric drainage and diarrhea.

Usually a potassium deficiency can be corrected by oral administration of potassium supplements. With normal kidney function, it is difficult to produce potassium intoxication by oral administration. However, potassium supplements must be administered with caution since, usually, the exact amount of the deficiency is not accurately known. Checks on the patient's clinical status and periodic EKG and/or serum potassium levels should be made. High serum potassium levels may cause death by cardiac depression, arrhythmias or arrest.

In patients with hypokalemia who also have alkalosis and a chloride deficiency (hypokalemic hypochloremic alkalosis), there will be a requirement for chloride ions. TWIN-K-CI is recommended for use in these patients.

### ADVERSE REACTIONS

Symptoms of potassium intoxication include paresthesias of the extremities, flaccid paralysis, listlessness, mental confusion, weakness and heaviness of the legs, fall in blood pressure, cardiac arrhythmias and heart block. Hyperkalemia may exhibit the following electrocardiographic abnormalities: disappearance of the P wave, widening and slurring of the QRS complex, changes of the ST segment and tall peaked T waves.

TWIN-K-CI taken on an empty stomach in undiluted doses larger than 30 ml can produce gastric irritation with nausea, vomiting, diarrhea, and abdominal discomfort.

### OVERDOSEAGE

The administration of oral potassium supplements to persons with normal kidney function rarely causes serious hyperkalemia. However, if the renal excretory function is impaired, potentially fatal hyperkalemia can result. It is important to note that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration with or without EKG changes.

Treatment measures include:

1. Elimination of potassium containing drugs or foods.
2. Intravenous administration of 300 to 500 ml/hr of a 10% dextrose solution containing 10-20 units of crystalline insulin per 1000 milliliters.
3. Correction of acidosis.
4. Use of exchange resins or peritoneal dialysis.

In treating hyperkalemia, it should be noted that patients stabilized on digitalis can develop digitalis toxicity when the serum potassium concentration is changed too rapidly.

### DOSEAGE AND ADMINISTRATION

The usual adult dosage is one tablespoonful (15 ml) in 6-8 fluid ounces of water or fruit juice, two to four times a day. This will supply 30 to 60 mEq of potassium ions and 8 to 16 mEq of chloride ions. The usual preventative dose of potassium is 20 mEq per day while therapeutic doses range from 30 mEq to 100 mEq per day. Because of the potential for gastrointestinal irritation, undiluted large single doses (30 ml or more) of TWIN-K-CI are to be avoided.

Deviations from this schedule may be indicated, since no average total daily dose can be defined, but must be governed by close observation for clinical effects.

### HOW SUPPLIED

Bottles of 1 pint (16 fl oz)

NDC 0524-0022-16

MANUFACTURED & DISTRIBUTED BY

**Boots Pharmaceuticals, Inc.**

Shreveport, Louisiana 71106

**Pioneers in Medicine For the Family**





member of this team, there appears to be no pressing need for certified nurse-midwives in Kansas at this time.

Midwives should have a minimum of three years of formal training, including at least one year of nursing. For those midwives who have already completed nursing education, two years of midwifery education should be the minimum requirement. The certified nurse-midwife should meet these standards; lower standards are unacceptable.

The KMS supports actions and programs that encourage family-centered maternity care while continuing to provide the mother and her infant with the accepted standards of safety available only in hospital setting.

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#### **RESOLUTION NO. 81-14**

##### **Periodic Cancer Screening for Women**

WHEREAS, The American Cancer Society has recommended that cytologic screening for cervical neoplasia would have a multi-year interval; and

WHEREAS, the Kansas Medical Society does not agree with the American Cancer Society's recommendation; therefore be it

*Resolved*, That the Kansas Medical Society recommend annual cytologic screening for cervical neoplasia for most women; and be it further

*Resolved*, That extending the screening interval in the low-risk group should be an informed choice arrived at by the patient and her physician.

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#### **RESOLUTION NO. 81-15**

##### **Recommendations of the Graduate Medical Education National Advisory Council**

WHEREAS, The Graduate Medical Education National Advisory Council offers as one of its major recommendations a decrease of 17 per cent from current levels in the U.S. medical school enrollment, predicting a surplus of physicians by 1990; and

WHEREAS, The number of Kansas communities seeking physicians, particularly in rural areas, has not been reduced substantially as indicated by records at the University of Kansas School of Medicine and the results of a study by the Kansas Department of Health and Environment; and

WHEREAS, There was no representation from rural America on the Graduate Medical Education National Advisory Council, thus disenfranchising one-third

of the nation's population in the need of medical care; and

WHEREAS, The Kansas Legislature is considering a comprehensive interim study of the University of Kansas School of Medicine, its facilities, size, and operation; therefore be it

*Resolved*, That the Kansas Medical Society encourage the University of Kansas School of Medicine to delay any action on the recommendations of GMENAC until such time as a committee of the Medical Society has made an indepth study of the recommendations as they apply to Kansas; and be it further

*Resolved*, That all legislators at both the state and national level be notified of this action.

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#### **RESOLUTION NO. 81-16**

##### **PSRO**

Not adopted.

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#### **RESOLUTION NO. 81-17**

##### **Malpractice Insurance**

Not adopted.

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#### **RESOLUTION NO. 81-18**

##### **Automobile Safety Restraint Devices for Children**

WHEREAS, The leading cause of death in children over one year of age is automobile accident; and

WHEREAS, The incidence of mortality and morbidity of children in such accidents can be reduced as much as 80 per cent by the use of proper restraint devices; and

WHEREAS, The use of such restraint devices could be greatly increased by the implementation of a statewide "First Ride a Safe Ride" program to encourage the use of safety restraints for newborns when they go home from the hospital; and

WHEREAS, The Kansas Medical Society was a key sponsoring organization of legislation requiring the use of such devices; therefore be it

*Resolved*, That the Kansas Medical Society demonstrate its strong support for implementation of a program to promote the use of safety restraint devices by children riding in automobiles by:

1. Co-sponsoring educational programs in Kansas communities for professionals and others about the importance of the use of child safety restraints in automobiles.



2. Helping identify a physician on the medical staff of each hospital in Kansas delivering newborns who would be willing to serve as an advocate for the "First Ride a Safe Ride" program.

3. Assisting physicians in Kansas to encourage the use of restraints by helping them obtain information about approved restraint devices and their availability through local commercial outlets and loaner programs and techniques to encourage their use.

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### RESOLUTION NO. 81-19

#### Professional Standards Review Organization

WHEREAS, The Kansas Foundation for Medical Care has proven to be a cost-effective, efficient peer review program which can demonstrate a positive impact in the areas of quality assurance and utilization; and

WHEREAS, The Professional Standards Review Organization law was enacted in 1972, with its primary goal being the assurance of high quality medical care; and

WHEREAS, In reality the program is functioning as a mechanism to place restraints on the costs of health care; therefore be it

*Resolved*, That the Kansas Medical Society support the repeal of the PSRO law; and be it further

*Resolved*, That the Kansas Medical Society support physician developed and implemented utilization review and quality of care programs such as that being done by the KFMC; and be it further

*Resolved*, That the Kansas Medical Society support local physician-directed utilization review programs developed and implemented in cooperation with hospitals which will assure high quality medical care based on medical necessity and provided at appropriate levels of care.

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### RESOLUTION NO. 81-20

#### Health Planning Act

WHEREAS, The Reagan administration has announced its intent to phase out funding for PL 93-641, The Health Planning Act, over the next three years; and

WHEREAS, Health planning programs have imposed federal regulations upon what should be primarily locally directed health planning; and

WHEREAS, Health planning has not achieved its initial goals; therefore be it

*Resolved*, That the KMS support the repeal of PL 93-641 and that this information be disseminated to the key members of the Kansas Legislature, the U.S. Congress, the AMA, and others as deemed appropriate; and be it further

*Resolved*, That the KMS indicate its support for and urge physician participation in locally developed voluntary health planning programs.

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### RESOLUTION NO. 81-21

#### Health Systems Agencies

Not adopted.

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### RESOLUTION NO. 81-22

#### Advanced Trained Nurses

WHEREAS, It is questionable whether or not there is a need for nurses with advanced training in light of the changing physician supply; therefore be it

*Resolved*, That the Kansas Medical Society study the state's needs for additional numbers of advanced trained nurses and report back to the 1982 Annual Meeting.

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### RESOLUTION NO. 81-23

#### Patient Complaint Referral

WHEREAS, There is currently no systematic method for insuring that the medical director of a nursing home is notified of patient care complaints; and

WHEREAS, The quality of patient care could be improved if the medical director were routinely notified of patient care complaints; therefore be it

*Resolved*, That the Kansas Medical Society encourage the Kansas Health Care Association to develop for its member nursing homes a systematic method for referring all complaints relating to the care or condition of patients to the medical director; and be it further

*Resolved*, That a copy of this resolution be distributed to the current medical directors of nursing homes in Kansas.

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### RESOLUTION NO. 81-24

#### Multiple Drug Therapies in the Elderly Patient

WHEREAS, It is recognized that the problem of multiple drug therapies is especially important as it relates to nursing home patients; therefore be it

*Resolved*, That physicians, as well as nursing home personnel, be especially attentive to the problems of multiple drug therapies in the aged patient.

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### RESOLUTION NO. 81-25

#### Excessive Regulation and Duplicative Inspections of Nursing Homes

WHEREAS, There is excessive regulation and repetitive duplicative inspections of nursing homes in a time of decreasing availability of public financing; and

WHEREAS, There is a need for more time for personal patient care and less time for documentation, and for wiser expenditures of tax monies; therefore be it

*Resolved*, That the Kansas Medical Society is opposed to excessive regulation and duplication of inspections of nursing homes and the related expenses; and be it further

*Resolved*, That the Kansas Medical Society recommend to the Secretary of Health and Environment that the quality of nursing home patient care could be improved by eliminating excessive regulations and by appointing one agency to carry out nursing home inspections whose findings would be acceptable to all agencies concerned.

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### RESOLUTION NO. 81-26

#### Inservice Training for Nursing Home Personnel

WHEREAS, Kansas nursing homes have limited resources for providing inservice training; and

WHEREAS, The Kansas Medical Society recognizes special problems of nursing home patients; therefore be it

*Resolved*, That the Kansas Medical Society provide a teaching outline for use of physicians; and be it further

*Resolved*, That Kansas physicians be encouraged to assist in the inservice training of nursing home personnel in the care of the nursing home patient.

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### RESOLUTION NO. 81-27

#### Cost Awareness

WHEREAS, The success of cost effectiveness activities depends to a great extent on active participation by physicians at the local level; and

WHEREAS, The problems of rising health costs can best be met by working within the system, instead of imposing regulatory solution; therefore be it

*Resolved*, That the Kansas Medical Society encourages hospital medical staffs to take a more active role in cost containment activities in the hospital; and be it further

*Resolved*, That the Kansas Medical Society encourages component and county medical societies to develop active cost awareness committees.

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### RESOLUTION NO. 81-28

#### Cost Effective Medical Care

WHEREAS, The influence of medical school and residency training philosophies on the utilization of health resources is extremely significant; and

WHEREAS, Medical schools and residency training programs have a responsibility to encourage cost effective use of valuable health resources by physicians they train; therefore be it

*Resolved*, That the Kansas Medical Society encourages the University of Kansas School of Medicine to offer a required course of study in both the medical school and residency training programs that emphasizes delivering cost effective medical care.

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### RESOLUTION NO. 81-29

#### Education for All Handicapped Children Act of 1975 — PL 94-142

WHEREAS, PL 94-142 was enacted to provide educational assistance to all handicapped children designed to meet their unique needs; and

WHEREAS, Some interpretations of this law are that school districts shall be financially responsible for the care of identified handicapped children; and

WHEREAS, Supplementary federal and state funding seem inadequate to carry out such programs; and

WHEREAS, This interpretation of the law, whether correct or incorrect, may be causing many children with potential handicaps to go unnoticed until their problems reach the chronic stage, particularly from a psychiatric standpoint; therefore be it

*Resolved*, That the Kansas Medical Society contact the Kansas State Department of Education and request that a joint committee be appointed to study and explore the ramifications of PL 94-142, including any pertinent state laws; and be it further

*Resolved*, That the results of this study be forwarded to the KMS Executive Committee and, if appropriate, to the Kansas Congressional delegation and state Legislators.



**RESOLUTION NO. 81-30****M.D.-O.D. Committee**

*(Referred to Executive Committee for Study)*

WHEREAS, Previous policies of the Kansas Medical Society indicate that the M.D.-O.D. Committee stands as an autonomous committee apart from the Ophthalmology Section; yet the Ophthalmology Section selects the KMS representatives and agrees to the time, place, and agenda of the meetings; therefore be it

*Resolved*, That it is the policy of the Kansas Medical Society that the M.D.-O.D. Committee shall be under the direct control of the Ophthalmology Section of the Kansas Medical Society.

**RESOLUTION NO. 81-31****Motorcycle Helmet Law**

WHEREAS, The increasing use of motorcycles exposes many of our patients to life-threatening trauma; and

WHEREAS, The positive benefits of protective headgear have been demonstrated; therefore be it

*Resolved*, That the Kansas Medical Society encourage all motorcycle operators and passengers to wear protective headgear.

**RESOLUTION NO. 81-32****Wesley H. Sowers**

WHEREAS, Wesley H. Sowers led a distinguished career in service to the people of Kansas through his tenure in the State Senate; and

WHEREAS, He did an exemplary job as Chairman of the Senate Public Health and Welfare Committee for many years; and

WHEREAS, In 1976, under his direct guidance and counsel, the Legislature enacted a comprehensive professional liability program which averted a potential statewide crisis affecting the entire health sector; and

WHEREAS, He was a fair and respected friend of the medical professional; and

WHEREAS, His breadth of knowledge, exceptional judgement, and enthusiasm for the job will serve as a standard for others following him; therefore be it

*Resolved*, That the Kansas Medical Society commend Wesley H. Sowers for his years of service to the people of Kansas; and be it further

*Resolved*, That the Kansas Medical Society express its profound admiration, appreciation, and re-

spect for this true gentleman; and be it further

*Resolved*, That this resolution of commendation for Wesley H. Sowers be entered into the permanent archives of the Kansas Medical Society.

**RESOLUTION NO. 81-33****Exercise Facilities For Medical Students and Residents at UKSM-KC**

Not adopted.

**RESOLUTION NO. 81-34****Mrs. Jean Crouch**

WHEREAS, Mrs. Jean Crouch was selected 1981 Kansas Mother of the Year; and

WHEREAS, Mrs. Crouch was subsequently selected the 1981 National Mother of the Year; and

WHEREAS, Mrs. Crouch is the wife of a member of the Kansas Medical Society and a former president of the Kansas Medical Society Auxiliary; therefore be it

*Resolved*, That the Kansas Medical Society members share in the pride of her husband and their children in all this well deserved honor for a great mother, wife, and auxilian.

**RESOLUTION NO. 81-35****AMA Dues**

Not adopted.

**RESOLUTION NO. 81-36****Commendation to University of Kansas Medical Center College of Health Sciences and Hospital, Kansas City, Kansas**

WHEREAS, The Kansas Medical Society and the University of Kansas School of Medicine have had a long and close relationship for many years; and

WHEREAS, The University of Kansas School of Medicine is fulfilling in an admirable way its mission of providing physicians for the state of Kansas; and

WHEREAS, Many recent graduates are locating in underserved areas as a result of strenuous efforts by the Medical Center and by the educators at the School; and

WHEREAS, Recent news stories in the Wichita papers tell of the great progress that has been made at



# PAIN AND TENSION...

Double fault for weekend warriors

ACE THE ACHE  
with

# Equagesic<sup>®</sup>

(meprobamate and ethoheptazine citrate with aspirin) Wyeth

Twofold analgesic action teamed with time-proven efficacy against concurrent anxiety and tension in patients with musculoskeletal disease.\*

#### EQUAGESIC—Abbreviated Summary

**\*INDICATIONS:** Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows.

"Possibly" effective: for the treatment of pain accompanied by tension and/or anxiety in patients with musculoskeletal disease or tension headache. Final classification of the less-than-effective indications requires further investigation.

The effectiveness of Equagesic in long-term use, i.e. more than four months, has not been assessed by systematic clinical studies. The physician should periodically reassess usefulness of the drug for the individual patient.

**CONTRAINDICATIONS:** Equagesic should not be given to individuals with a history of sensitivity or severe intolerance to aspirin, meprobamate, or ethoheptazine citrate.

**WARNINGS:** Careful supervision of dose and amounts prescribed for patients is advised, especially with those patients with known propensity for taking excessive quantities of drugs. Excessive and prolonged use in susceptible persons, e.g., alcoholics, former addicts, and other severe psychoneurotics, has been reported to result in dependence on or habituation to the drug. Where excessive dosage has continued for weeks or months, dosage should be reduced gradually rather than abruptly stopped, since withdrawal of a "crutch" may precipitate withdrawal reaction of greater proportions than that for which the drug was originally prescribed. Abrupt discontinuance of doses in excess of the recommended dose has resulted in some cases in the occurrence of epileptiform seizures. Special care should be taken to warn patients taking meprobamate that tolerance to alcohol may be lowered with resultant slowing of reaction time and impairment of judgment and coordination.

**USAGE IN PREGNANCY AND LACTATION:** An increased risk of congenital malformations associated with the use

of minor tranquilizers (meprobamate, chloridiazepoxide, and diazepam) during the first trimester of pregnancy has been suggested in several studies. Because use of these drugs is rarely a matter of urgency, their use during this period should almost always be avoided. The possibility that a woman of child-bearing potential may be pregnant at the time of institution of therapy should be considered. Patients should be advised that if they become pregnant during therapy or intend to become pregnant they should communicate with their physicians about the desirability of discontinuing the drug. Meprobamate passes the placental barrier. It is present both in umbilical-cord blood at or near maternal plasma levels and in breast milk of lactating mothers at concentrations two to four times that of maternal plasma. When use of meprobamate is contemplated in breast-feeding patients, the drug's higher concentration in breast milk as compared to maternal plasma levels should be considered.

Preparations containing aspirin should be kept out of the reach of children. Equagesic is not recommended for patients 12 years of age and under.

**PRECAUTIONS:** Should drowsiness, ataxia, or visual disturbance occur, the dose should be reduced. If symptoms continue, patients should not operate a motor vehicle or any dangerous machinery.

Suicidal attempts with meprobamate have resulted in coma, shock, vasomotor and respiratory collapse, and anuria. Very few suicidal attempts were fatal, although some patients ingested very large amounts of the drug (20 to 40 gm). These doses are much greater than recommended. The drug should be given cautiously, and in small amounts, to patients who have suicidal tendencies. In cases where excessive doses have been taken, sleep ensues rapidly and blood pressure, pulse, and respiratory rates are reduced to basal levels. Hyperventilation has been reported occasionally. Any drug remaining in the stomach should be removed and symptomatic treatment given. Should respiration become very shallow and slow, CNS stimulants, e.g., caffeine, Meprazol, or amphet-

amine, may be cautiously administered. If severe hypotension develops, pressor amines should be used parenterally to restore blood pressure to normal levels.

**ADVERSE REACTIONS:** A small percentage of patients may experience nausea with or without vomiting and epigastric distress. Dizziness occurs rarely when meprobamate and ethoheptazine citrate with aspirin is administered in recommended dosage. The meprobamate may cause drowsiness but, as a rule, this disappears as therapy is continued. Should drowsiness persist and be associated with ataxia, this symptom can usually be controlled by decreasing the dose, but occasionally it may be desirable to administer central stimulants such as amphetamine or mephentermine sulfate concomitantly to control drowsiness.

A clearly related side effect to the administration of meprobamate is the rare occurrence of allergic or idiosyncratic reactions. This response develops, as a rule, in patients who have had only 1-4 doses of meprobamate and have not had a previous contact with the drug. Previous history of allergy may or may not be related to the incidence of reactions. Mild reactions are characterized by an itchy urticarial or erythematous, maculopapular rash which may be generalized or confined to the groin. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema, and fever have also been reported.

More severe cases, observed only very rarely, may also have other allergic responses, including fever, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case), and hyperthermia. Treatment should be symptomatic such as administration of epinephrine, antihistamine, and possibly hydrocortisone. Meprobamate should be stopped, and resumption of therapy should not be attempted. Rare cases have been reported where patients receiving meprobamate suffered from aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis, and hemolytic anemia. In nearly every instance reported, other toxic agents known to have caused these conditions have been associated with meprobamate. A few cases of leukopenia during

continuous administration of meprobamate are reported, most of these returned to normal without discontinuation of the drug. Impairment of accommodation and visual acuity has been reported rarely.

**OVERDOSE:** Two instances of accidental or intentional significant overdose with ethoheptazine citrate combined with aspirin have been reported. These were accompanied by symptoms of CNS depression, including drowsiness and light-headedness, with uneventful recovery. However, on the basis of pharmacological data, it may be anticipated that CNS stimulation could occur. Other anticipated symptoms would include nausea and vomiting. Appropriate therapy of signs and symptoms as they appear is the only recommendation possible at this time. Overdosage with ethoheptazine combined with aspirin would probably produce the usual symptoms and signs of salicylate intoxication. Observation and treatment should include induced vomiting or gastric lavage, specific parenteral electrolyte therapy for ketoacidosis and dehydration, watching for evidence of hemorrhagic manifestations due to hypoprothrombinemia which, if it occurs, usually requires whole-blood transfusions.

**DESCRIPTION:** Each Equagesic tablet contains 150 mg meprobamate, 75 mg ethoheptazine citrate and 250 mg aspirin.

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\*This drug has been evaluated as possibly effective for this indication

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# Down with pain

## Step up to reliable relief

for mild to moderate pain

### Wygesic<sup>®</sup>

(65 mg propoxyphene HCl and 650 mg acetaminophen) Wyeth

More than twice as much acetaminophen as the leading combination plus a full therapeutic dose of propoxyphene...all in a convenient, economical single tablet.

#### WYGESIC—Abbreviated Summary

**INDICATION:** For the relief of mild-to-moderate pain.

**CONTRAINDICATION:** Hypersensitivity to propoxyphene or to acetaminophen.

**WARNINGS:** CNS ADDITIVE EFFECTS AND OVERDOSE: Propoxyphene in combination with alcohol, tranquilizers, sedative-hypnotics, or other CNS depressants has an additive depressant effect. Patients taking this drug should be advised of the additive effect and warned not to exceed the dosage recommended. Toxic effects and fatalities have occurred following overdoses of propoxyphene alone or in combination with other CNS depressants. Most of these patients had histories of emotional disturbances or suicidal ideation or attempts, as well as misuse of tranquilizers, alcohol, or other CNS-active drugs. Caution should be exercised in prescribing large amounts of propoxyphene for such patients (see Management of Overdosage).

**DRUG DEPENDENCE:** Propoxyphene can produce drug dependence characterized by psychic dependence and less frequently physical dependence and tolerance. It will only partially suppress the withdrawal syndrome in individuals physically dependent on morphine or other narcotics. The abuse liability of propoxyphene is qualitatively similar to codeine's, although quantitatively less, and propoxyphene should be prescribed with the same degree of caution appropriate to the use of codeine.

**USAGE IN AMBULATORY PATIENTS:** Propoxyphene may impair the mental and/or physical abilities required for potentially hazardous tasks, e.g. driving a car or operating machinery. Patients should be cautioned accordingly.

**USAGE IN PREGNANCY:** Safe use in pregnancy has not been established relative to possible adverse effects on fetal development. **INSTANCES OF WITHDRAWAL SYMPTOMS IN THE NEONATE HAVE BEEN REPORTED FOLLOWING USAGE DURING PREGNANCY.** Therefore, propoxyphene should not be used in pregnant women unless, in the

judgement of the physician, the potential benefits outweigh the possible hazards.

**USAGE IN CHILDREN:** Propoxyphene is not recommended for children because documented clinical experience has been insufficient to establish safety and a suitable dosage regimen in the pediatric group.

**PRECAUTIONS:** Confusion, anxiety, and tremors have been reported in a few patients receiving propoxyphene concomitantly with orphenadrine. The CNS depressant effect of propoxyphene may be additive with other CNS depressants, including alcohol.

**ADVERSE REACTIONS:** The most frequent adverse reactions are dizziness, sedation, nausea, and vomiting. These seem more prominent in ambulatory than in nonambulatory patients; some of these reactions may be alleviated if the patient lies down. Other adverse reactions include constipation, abdominal pain, skin rashes, light-headedness, headache, weakness, euphoria, dysphoria, and minor visual disturbances. The chronic ingestion of propoxyphene in doses over 800 mg per day has caused toxic psychoses and convulsions. Cases of liver dysfunction have been reported.

**DRUG INTERACTIONS:** Propoxyphene in combination with alcohol, tranquilizers, sedative-hypnotics, and other CNS depressants has an additive depressant effect. Patients taking this drug should be advised of the additive effect and warned not to exceed the dosage recommended. (see Warnings) Confusion, anxiety, and tremors have been reported in a few patients receiving propoxyphene concomitantly with orphenadrine.

**MANAGEMENT OF OVERDOSAGE: SYMPTOMS** The manifestations of serious overdosage with propoxyphene are similar to those of narcotic overdosage and include respiratory depression (a decrease in respiratory rate and/or tidal volume, Cheyne-Stokes respiration, cyanosis), extreme somnolence progressing to stupor or coma, pupillary constriction, and circulatory collapse. In addition to these characteristics, which are reversed by narcotic antago-

nists such as naloxone, there may be other effects. Overdoses of propoxyphene can cause delay of cardiac conduction as well as focal or generalized convulsions, a prominent feature in most cases of severe poisoning. Cardiac arrhythmias and pulmonary edema have occasionally been reported, and apnea, cardiac arrest, and death have occurred.

Symptoms of massive overdosage with acetaminophen may include nausea, vomiting, anorexia, and abdominal pain, beginning shortly after ingestion and lasting for 12 to 24 hours. However, early recognition may be difficult since early symptoms may be mild and nonspecific. Evidence of liver damage is usually delayed. After the initial symptoms, the patient may feel less ill; however, laboratory determinations are likely to show a rapid rise in liver enzymes and bilirubin. In case of serious hepatotoxicity, jaundice, coagulation defects, hypoglycemia, encephalopathy, coma, and death may follow. Renal failure due to tubular necrosis, and myocardial pathology, have also been reported.

Ingestion of 10 grams or more of acetaminophen may produce hepatotoxicity. A 13-gram dose has reportedly been fatal.

**TREATMENT:** Primary attention should be given to the reestablishment of adequate respiratory exchange through provision of a patent airway and institution of assisted or controlled ventilation. The narcotic antagonists, naloxone, nalorphine, and levallorphan, are specific antidotes against the respiratory depression produced by propoxyphene. An appropriate dose of one of these antagonists should be administered preferably I.V., simultaneously with efforts at respiratory resuscitation and the antagonist should be repeated as necessary until the patient's condition remains satisfactory. In addition to a narcotic antagonist, the patient may require careful titration with an anticonvulsant to control seizures. Antiepileptic drugs (e.g. caffeine or amphetamine) should not be used because of their tendency to precipitate convulsions.

Oxygen, IV fluids, vasopressors and other supportive measures should be used as indicated. Gastric lavage may be helpful. Activated charcoal can absorb a significant amount of ingested propoxyphene. Dialysis is of little value in poisoning by propoxyphene alone. Acetaminophen is rapidly absorbed, and efforts to remove the drug from the body should not be delayed. Copious gastric lavage and/or induction of emesis may be indicated. Activated charcoal is probably ineffective unless administered almost immediately after acetaminophen ingestion. Neither forced diuresis nor hemodialysis appears to be effective in removing acetaminophen. Since acetaminophen in overdose may have an antidiuretic effect and may produce renal damage, administration of fluids should be carefully monitored to avoid overload. It has been reported that mercaptamine (cysteine) or other thiol compounds may protect against liver damage if given soon after overdosage (8-10 hours). N-acetylcysteine is under investigation as a less toxic alternative to mercaptamine, which may cause anorexia, nausea, vomiting, and drowsiness. Appropriate literature should be consulted for further information. (JAMA 237:2406-2407, 1977)

Clinical and laboratory evidence of hepatotoxicity may be delayed up to one week. Acetaminophen plasma levels and half-life may be useful in assessing the likelihood of hepatotoxicity. Serial hepatic enzyme determinations are also recommended.

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the Medical Center recently concerning administrative matters as well as academic matters; and

WHEREAS, The Medical Society of Sedgwick County is keenly aware of the importance of medical education because of the University of Kansas School of Medicine-Wichita, now located in the Wichita community; and

WHEREAS, It has been the tradition of Kansas physicians to stand by its University and help it when requested; therefore be it

*Resolved*, That the Kansas Medical Society express its appreciation to the Chancellor of the University of Kansas and the Executive Vice Chancellor at the Medical Center for the great progress that the school has made in providing health care for the people of the state; and be it further

*Resolved*, That the Kansas Medical Society is ready at any time to offer its services to assist the University in its administrative and educational goals; and be it further

*Resolved*, That copies of this resolution be sent to the Chancellor of the University of Kansas, the Executive Vice Chancellor, and the Chairman of the Board of Regents.

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#### RESOLUTION NO. 81-37

##### **Commendation to William C. Swisher, M.D.**

WHEREAS, Dr. William C. Swisher has served the state of Kansas with great distinction as a member of the Board of Healing Arts both as secretary and as member; and

WHEREAS, Dr. Swisher has served the Kansas Medical Society for many years as a delegate and as a valued member; and

WHEREAS, Dr. Swisher exemplifies the finest tradition of service both to the public good and to his own patients; and

WHEREAS, Dr. Swisher is highly regarded by his colleagues both in the medical profession and by other health care providers in the City of Wichita and in Sedgwick County; and

WHEREAS, Dr. Swisher was recently honored by the Medical Society of Sedgwick County by presentation of the Distinguished Service Award; therefore be it

*Resolved*, That the Kansas Medical Society offers its best wishes and congratulations to Dr. Swisher on his many accomplishments; and be it further

*Resolved*, That a copy of this resolution be spread

upon the minutes of this 122nd meeting of the Kansas Medical Society; and be it further

*Resolved*, That a copy of the resolution be presented to Dr. Swisher.

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#### RESOLUTION NO. 81-38

##### **Change in Reimbursement to Hospitals for Medicaid Patients**

WHEREAS, The Reagan administration has requested a reduction in federal support for Medicaid (Title XIX) program; and

WHEREAS, The State of Kansas has always maintained a high level of medical treatment for the poor; and

WHEREAS, The Medicaid law mandates a level of care that is consistent with community standards; and

WHEREAS, The Kansas State Department of Social and Rehabilitation Services has arbitrarily declared a reduction of treatment days in the hospital for Medicaid patients to the PAS 50th percentile for Title XIX patients; therefore be it

*Resolved*, That the Kansas Medical Society express its opposition to the Governor of the State of Kansas and to the Director of the Social and Rehabilitation Services to this act as not in the best interest of the Medicaid patient and that financial solutions should be sought in the state Legislature to solve this problem.

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#### RESOLUTION NO. 81-39

##### **1981 Commendation**

WHEREAS, The 122nd Annual Session of the Kansas Medical Society was hosted by Salina and the Saline County Medical Society on May 7-10; and

WHEREAS, The hospitality during this session has been warm and generous, the facilities and services excellent, the scientific sessions both timely and well presented, and the entire meeting hosted in a courteous, efficient, and professional manner; therefore be it

*Resolved*, That the Kansas Medical Society and this House of Delegates extend to the City of Salina, the Saline County Medical Society, and the Saline County Medical Auxiliary a letter of commendation for hosting the 122nd Annual Session of the Kansas Medical Society and proffer to them our deepest thanks.



# Current Opinions

## *Judicial Council of the AMA*

### **1.01 Terminology**

Historically, the term "ethical" has been used in opinions of the Judicial Council and in resolutions adopted by the House of Delegates to refer to matters involving (1) moral principles or practices; (2) customs and usages of the medical profession; and (3) matters of policy not necessarily involving issues of morality in the practice of medicine. The term "unethical" has been used to refer to conduct which fails to conform to these professional standards, customs and usages, or policies. Unethical conduct involving moral principles, values and duties calls for disciplinary action such as censure, suspension, or expulsion from medical society membership.

Failure to conform to the customs and usages of the medical profession may call for disciplinary action depending upon the particular circumstances involved, local attitudes, and how the conduct in question may reflect upon the dignity of and respect for the medical profession.

In matters strictly of a policy nature, a physician who disagrees with the position of the American Medical Association is entitled to freedom and protection of his point of view.

### **1.02 The Relation of Law and Ethics**

The following statements are intended to clarify the interrelationship between law and ethics.

Ethical standards of professional conduct and responsibility may exceed but are never less than, nor contrary to, those required by law.

Violation of governmental laws may subject the physician to civil or criminal liability. Expulsion from membership is the maximum penalty that may be imposed by a medical society upon a physician who violates ethical standards involving a breach of moral duty or principle. However, medical societies have a civic and professional obligation to report to the appropriate governmental body or state board of medical examiners credible evidence that may come to their attention involving the alleged criminal conduct of any physician relating to the practice of medicine.

Although, a physician charged with alleged illegal conduct may be acquitted or exonerated in civil or criminal proceedings, this does not discharge a medical society from its obligation to initiate a disciplinary proceeding against a member with reference

to the same conduct where there is credible evidence tending to establish unethical conduct.

Ethical pronouncements of the Judicial Council and the House of Delegates should not be so interpreted, construed or applied as to encourage conduct which violates a valid law.

### **2.11 Terminal Illness**

The social commitment of the physician is to prolong life and relieve suffering. Where the observance of one conflicts with the other, the physician, patient, and/or family of the patient have discretion to resolve the conflict.

For humane reasons, with informed consent a physician may do what is medically necessary to alleviate severe pain, or cease or omit treatment to let a terminally ill patient die, but he should not intentionally cause death. In determining whether it is in the best interest of a terminally ill incompetent patient to administer potentially life-prolonging medical treatment, the physician should consider what the possibility is for extending life under humane and comfortable conditions and what are the wishes and attitudes of the family or those who have responsibility for the custody of the patient.

Where a terminally ill patient's coma is beyond doubt irreversible and there are adequate safeguards to confirm the accuracy of the diagnosis, all means of life support may be discontinued.

### **3.01 Nonscientific Practitioners**

It is wrong to engage in or to aid and abet in treatment which has no scientific basis and is dangerous, is calculated to deceive the patient by giving him false hope, or which may cause the patient to delay in seeking proper care until his condition becomes irreversible.

Physicians should also be mindful of state laws which prohibit a physician from aiding and abetting an unlicensed person in the practice of medicine, aiding or abetting a person with a limited license in providing services beyond the scope of his license, or undertaking the joint medical treatment of patients under the foregoing circumstances.

A physician is otherwise free to accept or decline to serve anyone who seeks his services, regardless of who has recommended that the individual see the physician.

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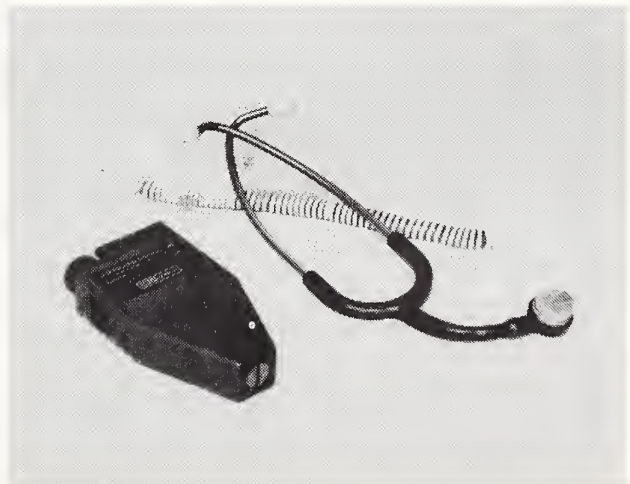
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1. See *Table I*
2. See *Table III*
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4. See *Table IV*
5. See *Table IV*

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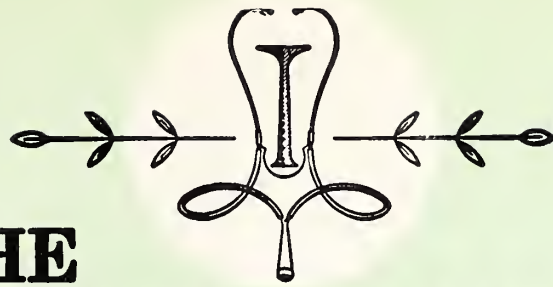
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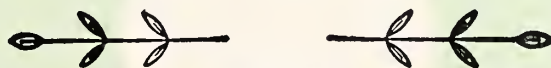
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# Feelings vs

*Some people feel that I am misused and overused and that I'm prescribed too often and for too many kinds of problems.*

The FACT is that approximately eight million people, or about 5 percent of the U.S. adult population, will use me during the current year. By contrast, the national health examination survey (1971-1975) found that 25 percent of the U.S. adult population experiences moderate to severe psychological distress. Additionally, studies of patient attitudes revealed that most patients have realistic views regarding the limitations of tranquilizers and a strong conservatism about their use, as evidenced by a general tendency to decrease intake over time. Finally, a six-year, large-scale, carefully conducted national survey showed that the great majority of physicians appropriately prescribe tranquilizers.

*Some people feel that patients being treated with anxiolytic drugs are "weak," can't tolerate the anxieties of normal daily living, and should be able to resolve their problems on their own without the help of medication.*

The FACT is that while most people can withstand normal, everyday anxieties, some people experience excessive and persistent levels of anxiety due to personal or clinical problems. An extensive national survey concluded that Americans who do use tranquilizers have substantial

# Facts

justification as evidenced by their high levels of anxiety. It was further noted that antianxiety drugs are not usually prescribed for trivial, transient emotional problems.

*Some people feel afraid of me because of the stories they've heard about my being harmful and having the potential to produce physical dependence.*

The FACT is that there are thousands of references in the medical literature documenting my efficacy and safety. Extensive and painstakingly thorough studies of toxicological data conclude that I am one of the safest types of psychotropic drugs available. Moreover, I do not cause physical dependence if the recommended dosage and therapeutic regimen are followed under careful physician supervision. However, I can produce dependence if patients do not follow their physicians' directions and take me for prolonged periods, at dosages that exceed the therapeutic range. Patients for whom I have been prescribed should be cautious about their use of alcohol because an additive effect may result.

*Many of the most knowledgeable people feel that I became the No. 1 prescribed medication in America because no other tranquilizer has been proven more effective. Or safer.*

The FACT is they are right.

For a brief summary of product information on Valium (diazepam/Roche) ®, please see the following page. Valium is available as 2-mg, 5-mg and 10-mg scored tablets.



# Valium® diazepam/Roche

Before prescribing, please consult complete product information, a summary of which follows:

**Indications:** Management of anxiety disorders, or short-term relief of symptoms of anxiety; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome; convulsive disorders (not for sole therapy). The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma, may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other anti-depressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

**Dosage:** Individualize for maximum beneficial effect. **Adults:** Anxiety disorders, symptoms of anxiety, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed, adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d., adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. **Geriatric or debilitated patients:** 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) **Children:** 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

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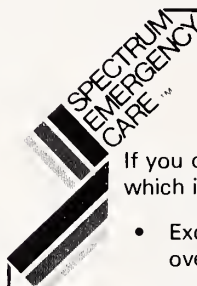


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#### EQUAGESIC—Abbreviated Summary

**\*INDICATIONS:** Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows:

"Possibly" effective: for the treatment of pain accompanied by tension and/or anxiety in patients with musculoskeletal disease or tension headache.

Final classification of the less-than-effective indications requires further investigation.

The effectiveness of Equagesic in long-term use, i.e. more than four months, has not been assessed by systematic clinical studies. The physician should periodically reassess usefulness of the drug for the individual patient.

**CONTRAINDICATIONS:** Equagesic should not be given to individuals with a history of sensitivity or severe intolerance to aspirin, meprobamate, or ethoheptazine citrate.

**WARNINGS:** Careful supervision of dose and amounts prescribed for patients is advised, especially with those patients with known propensity for taking excessive quantities of drugs. Excessive and prolonged use in susceptible persons, e.g., alcoholics, former addicts, and other severe psychoneurotics, has been reported to result in dependence on or habituation to the drug. Where excessive dosage has continued for weeks or months, dosage should be reduced gradually rather than abruptly stopped, since withdrawal of a "crutch" may precipitate withdrawal reaction of greater proportions than that for which the drug was originally prescribed. Abrupt discontinuance of doses in excess of the recommended dose has resulted in some cases in the occurrence of epileptiform seizures. Special care should be taken to warn patients taking meprobamate that tolerance to alcohol may be lowered with resultant slowing of reaction time and impairment of judgment and coordination.

**USAGE IN PREGNANCY AND LACTATION:** An increased risk of congenital malformations associated with the use

of minor tranquilizers (meprobamate, chlordiazepoxide, and diazepam) during the first trimester of pregnancy has been suggested in several studies. Because use of these drugs is rarely a matter of urgency, their use during this period should almost always be avoided. The possibility that a woman of child-bearing potential may be pregnant at the time of institution of therapy should be considered. Patients should be advised that if they become pregnant during therapy or intend to become pregnant they should communicate with their physicians about the desirability of discontinuing the drug.

Meprobamate passes the placental barrier. It is present both in umbilical cord blood at or near maternal plasma levels and in breast milk of lactating mothers at concentrations two to four times that of maternal plasma. When use of meprobamate is contemplated in breast-feeding patients, the drug's higher concentration in breast milk as compared to maternal plasma levels should be considered.

Preparations containing aspirin should be kept out of the reach of children. Equagesic is not recommended for patients 12 years of age and under.

**PRECAUTIONS:** Should drowsiness, ataxia, or visual disturbance occur, the dose should be reduced. If symptoms continue, patients should not operate a motor vehicle or any dangerous machinery. Suicidal attempts with meprobamate have resulted in coma, shock, vasomotor and respiratory collapse, and anuria. Very few suicidal attempts were fatal, although some patients ingested very large amounts of the drug (20 to 40 gm). These doses are much greater than recommended. The drug should be given cautiously, and in small amounts, to patients who have suicidal tendencies. In cases where excessive doses have been taken, sleep ensues rapidly and blood pressure, pulse, and respiratory rates are reduced to basal levels. Hyperventilation has been reported occasionally. Any drug remaining in the stomach should be removed and symptomatic treatment given. Should respiration become very shallow and slow, CNS stimulants, e.g., caffeine, Meclazol, or amphet-

mine, may be cautiously administered. If severe hypotension develops, pressor amines should be used parenterally to restore blood pressure to normal levels.

**ADVERSE REACTIONS:** A small percentage of patients may experience nausea with or without vomiting and epigastric distress. Dizziness occurs rarely when meprobamate and ethoheptazine citrate with aspirin is administered in recommended dosage. The meprobamate may cause drowsiness but, as a rule, this disappears as therapy is continued. Should drowsiness persist and be associated with ataxia, this symptom can usually be controlled by decreasing the dose, but occasionally it may be desirable to administer central stimulants such as amphetamine or mephentermine sulfate concomitantly to control drowsiness.

A clearly related side effect to the administration of meprobamate is the rare occurrence of allergic or idiosyncratic reactions. This response develops, as a rule, in patients who have had only 1-4 doses of meprobamate and have not had a previous contact with the drug. Previous history of allergy may or may not be related to the incidence of reactions.

Mild reactions are characterized by an itchy urticarial or erythematous, maculopapular rash which may be generalized or confined to the groin. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema, and fever have also been reported.

More severe cases, observed only very rarely, may also have other allergic responses, including fever, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case), and hyperthermia. Treatment should be symptomatic such as administration of epinephrine, antihistamine, and possibly hydrocortisone. Meprobamate should be stopped, and reinstitution of therapy should not be attempted.

Rare cases have been reported where patients receiving meprobamate suffered from aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis, and hemolytic anemia. In nearly every instance reported, other toxic agents known to have caused these conditions have been associated with Equagesic. A few cases of leukopenia during

continuous administration of meprobamate are reported, most of these returned to normal without discontinuation of the drug.

Impairment of accommodation and visual acuity has been reported rarely.

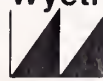
**OVERDOSE:** Two instances of accidental or intentional significant overdose with ethoheptazine citrate combined with aspirin have been reported. These were accompanied by symptoms of CNS depression, including drowsiness and light-headedness, with uneventful recovery. However, on the basis of pharmacological data, it may be anticipated that CNS stimulation could occur. Other anticipated symptoms would include nausea and vomiting. Appropriate therapy of signs and symptoms as they appear is the only recommendation possible at this time. Overdose with ethoheptazine combined with aspirin would probably produce the usual symptoms and signs of salicylate intoxication. Observation and treatment should include induced vomiting or gastric lavage, specific parenteral electrolyte therapy for ketoacidosis and dehydration, watching for evidence of hemorrhagic manifestations due to hypoprothrombinemia which, if it occurs, usually requires whole blood transfusions.

**DESCRIPTION:** Each Equagesic tablet contains 150 mg meprobamate, 75 mg ethoheptazine citrate and 250 mg aspirin.

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\*This drug has been evaluated as possibly effective for this indication.

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#### WYGESIC—Abbreviated Summary

**INDICATION:** For the relief of mild-to-moderate pain.

**CONTRAINDICATION:** Hypersensitivity to propoxyphene or to acetaminophen.

**WARNINGS:** CNS ADDITIVE EFFECTS AND OVERDOSAGE: Propoxyphene in combination with alcohol, tranquilizers, sedative-hypnotics, or other CNS depressants has an additive depressant effect. Patients taking this drug should be advised of the additive effect and warned not to exceed the dosage recommended. Toxic effects and fatalities have occurred following overdoses of propoxyphene alone or in combination with other CNS depressants. Most of these patients had histories of emotional disturbances or suicidal ideation or attempts, as well as misuse of tranquilizers, alcohol, or other CNS-active drugs. Caution should be exercised in prescribing large amounts of propoxyphene for such patients (see Management of Overdosage).

**DRUG DEPENDENCE:** Propoxyphene can produce drug dependence characterized by psychic dependence and less frequently, physical dependence and tolerance. It will only partially suppress the withdrawal syndrome in individuals physically dependent on morphine or other narcotics. The abuse liability of propoxyphene is qualitatively similar to codeine's although quantitatively less, and propoxyphene should be prescribed with the same degree of caution appropriate to the use of codeine.

**USAGE IN AMBULATORY PATIENTS:** Propoxyphene may impair the mental and/or physical abilities required for potentially hazardous tasks, e.g. driving a car or operating machinery. Patients should be cautioned accordingly.

**USAGE IN PREGNANCY:** Safe use in pregnancy has not been established relative to possible adverse effects on fetal development. **INSTANCES OF WITHDRAWAL SYMPTOMS IN THE NEONATE HAVE BEEN REPORTED FOLLOWING USAGE DURING PREGNANCY.** Therefore, propoxyphene should not be used in pregnant women unless, in the

judgement of the physician, the potential benefits outweigh the possible hazards.

**USAGE IN CHILDREN:** Propoxyphene is not recommended for children because documented clinical experience has been insufficient to establish safety and a suitable dosage regimen in the pediatric group. **PRECAUTIONS:** Confusion, anxiety, and tremors have been reported in a few patients receiving propoxyphene concomitantly with orphenadrine. The CNS depressant effect of propoxyphene may be additive with other CNS depressants, including alcohol.

**ADVERSE REACTIONS:** The most frequent adverse reactions are dizziness, sedation, nausea, and vomiting. These seem more prominent in ambulatory than in nonambulatory patients, some of these reactions may be alleviated if the patient lies down. Other adverse reactions include constipation, abdominal pain, skin rashes, light-headedness, headache, weakness, euphoria, dysphoria, and minor visual disturbances. The chronic ingestion of propoxyphene in doses over 800 mg per day has caused toxic psychoses and convulsions. Cases of liver dysfunction have been reported.

**DRUG INTERACTIONS:** Propoxyphene in combination with alcohol, tranquilizers, sedative-hypnotics, and other CNS depressants has an additive depressant effect. Patients taking this drug should be advised of the additive effect and warned not to exceed the dosage recommended. (see Warnings.) Confusion, anxiety, and tremors have been reported in a few patients receiving propoxyphene concomitantly with orphenadrine.

**MANAGEMENT OF OVERDOSAGE:** SYMPTOMS: The manifestations of serious overdosage with propoxyphene are similar to those of narcotic overdosage and include respiratory depression (a decrease in respiratory rate and/or tidal volume, Cheyne-Stokes respiration, cyanosis), extreme somnolence progressing to stupor or coma, pupillary constriction, and circulatory collapse. In addition to these characteristics, which are reversed by narcotic antago-

nists such as naloxone, there may be other effects. Overdoses of propoxyphene can cause delay of cardiac conduction as well as focal or generalized convulsions, a prominent feature in most cases of severe poisoning. Cardiac arrhythmias and pulmonary edema have occasionally been reported, and apnea, cardiac arrest, and death have occurred.

Symptoms of massive overdosage with acetaminophen may include nausea, vomiting, anorexia, and abdominal pain, beginning shortly after ingestion and lasting for 12 to 24 hours. However, early recognition may be difficult since early symptoms may be mild and nonspecific. Evidence of liver damage is usually delayed. After the initial symptoms, the patient may feel less ill; however, laboratory determinations are likely to show a rapid rise in liver enzymes and bilirubin. In case of serious hepatotoxicity, jaundice, coagulation defects, hypoglycemia, encephalopathy, coma, and death may follow. Renal failure due to tubular necrosis, and myocardiopathy, have also been reported.

Ingestion of 10 grams or more of acetaminophen may produce hepatotoxicity. A 13-gram dose has reportedly been fatal.

**TREATMENT:** Primary attention should be given to the reestablishment of adequate respiratory exchange through provision of a patent airway and institution of assisted or controlled ventilation. The narcotic antagonists, naloxone, nalorphine, and levallorphan, are specific antidotes against the respiratory depression produced by propoxyphene. An appropriate dose of one of these antagonists should be administered preferably I.V., simultaneously with efforts at respiratory resuscitation and the antagonist should be repeated as necessary until the patient's condition remains satisfactory in addition to a narcotic antagonist, the patient may require careful titration with an anticonvulsant to control seizures. Analeptic drugs (e.g. caffeine or amphetamine) should not be used because of their tendency to precipitate convulsions.

Oxygen, IV fluids, vasopressors and other supportive measures should be used as indicated. Gastric lavage may be helpful. Activated charcoal can absorb a significant amount of ingested propoxyphene. Dialysis is of little value in poisoning by propoxyphene alone. Acetaminophen is rapidly absorbed, and efforts to remove the drug from the body should not be delayed. Copious gastric lavage and/or induction of emesis may be indicated. Activated charcoal is probably ineffective unless administered almost immediately after acetaminophen ingestion. Neither forced diuresis nor hemodialysis appears to be effective in removing acetaminophen. Since acetaminophen in overdose may have an antidiuretic effect and may produce renal damage, administration of fluids should be carefully monitored to avoid overload. It has been reported that mercaptamine (cysteine) or other thiol compounds may protect against liver damage if given soon after overdosage (8-10 hours). N-acetylcysteine is under investigation as a less toxic alternative to mercaptamine, which may cause anorexia, nausea, vomiting and drowsiness. Appropriate literature should be consulted for further information. (JAMA 237:2406-2407, 1977)

Clinical and laboratory evidence of hepatotoxicity may be delayed up to one week. Acetaminophen plasma levels and half-life may be useful in assessing the likelihood of hepatotoxicity. Serial hepatic enzyme determinations are also recommended.

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## A U X I L I A R Y N E W S

Monday morning found us in reference committee meetings. Committee A dealt with proposed amendments to the By-laws, By-laws revisions, and resolutions. Committee B was concerned with the proposed budget for 1981-82 and dues category for widows and spouses of retired physicians. Committee C approved the continuation of the Shape Up For Life campaign; it was noted that many counties are just now implementing Shape Up programs, and maintaining the focus will allow a concentrated effort toward total fitness. They also approved the use of child safety restraints in cars, and implementation of a support program will be discussed soon. A resolution regarding public awareness of organ donations was passed as presented. The only resolution not passed as presented concerned support for home health care services in communities. The membership felt that this resolution should be referred back for further study because of questionable procedures in some area programs.

Appreciative audiences attended the three addresses: "Medicine for, and in, the Economy," George Will; "Managing 20th Century Stress," Robert S. Eliot, M.D.; and "The History of a Medical Marriage," Gordon H. Deckert, M.D.

The Convention wouldn't be complete without an evening at the theatre, and this year we attended "Peter Pan" with Sandy Duncan in the featured role. This production captured all of the play's original charm, and was a thrill for all of us in attendance.

Final preparations are underway for our WHITEHOUSE CONFERENCE FOR PRESIDENTS (county) to be held in Caney on June 25-26. A report will be forthcoming.

*Betty L. Moore,*  
President  
Kansas Medical Society Auxiliary

### *An Open Letter to Kansas Physicians*

The AMA and AMAA Conventions in Chicago are past and we are all home, filled with new knowledge and expectations. Our Kansas Medical Auxiliary was well represented by Mrs. David Laury, Mrs. Alan Sanders, Mrs. John Huff, Mrs. Herman Hiesterman, and myself. Mrs. Chester Young, past national president, and Mrs. Clair Cavanaugh, national AMAERF chairman, were there in their official capacities.

The Convention began on Sunday morning with national program presentations and in-depth consultations in AMAERF, health projects, legislation, membership, and resident physician/medical student spouse programs. The format was designed to enable us to bring questions and concerns to the national committees. These sessions were well attended and provided new ideas for many projects.



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## Brief Summary of Prescribing Information.

**Indications and Usage:** Management of anxiety disorders or short-term relief of symptoms of anxiety or anxiety associated with depressive symptoms. Anxiety or tension associated with stress of everyday life usually does not require treatment with an anxiolytic.

Effectiveness in long-term use, i.e., more than 4 months, has not been assessed by systematic clinical studies. Reassess periodically usefulness of the drug for the individual patient.

**Contraindications:** Known sensitivity to benzodiazepines or acute narrow-angle glaucoma.

**Warnings:** Not recommended in primary depressive disorders or psychoses. As with all CNS-acting drugs, warn patients not to operate machinery or motor vehicles, and of diminished tolerance for alcohol and other CNS depressants.

**Physical and Psychological Dependence:** Withdrawal symptoms like those noted with barbiturates and alcohol have occurred following abrupt discontinuance of benzodiazepines (including convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Addiction-prone individuals, e.g. drug addicts and alcoholics, should be under careful surveillance when on benzodiazepines because of their predisposition to habituation and dependence. Withdrawal symptoms have also been reported following abrupt discontinuance of benzodiazepines taken continuously at therapeutic levels for several months.

**Precautions:** In depression accompanying anxiety, consider possibility for suicide.

For elderly or debilitated patients, initial daily dosage should not exceed 2mg to avoid over-sedation. Terminate dosage gradually since abrupt withdrawal of any antianxiety agent may result in symptoms like those being treated: anxiety, agitation, irritability, tension, insomnia and occasional convulsions. Observe usual precautions with impaired renal or hepatic function. Where gastrointestinal or cardiovascular disorders coexist with anxiety, note that lorazepam has not been shown of significant benefit in treating gastrointestinal or cardiovascular component. Esophageal dilation occurred in rats treated with lorazepam for more than 1 year at 6mg/kg/day. No effect dose was 1.25mg/kg/day (about 6 times maximum human therapeutic dose of 10mg/day). Effect was reversible only when treatment was withdrawn within 2 months of first observation. Clinical significance is unknown, but use of lorazepam for prolonged periods and in geriatrics requires caution and frequent monitoring for symptoms of upper G.I. disease. Safety and effectiveness in children under 12 years have not been established.

**ESSENTIAL LABORATORY TESTS:** Some patients have developed leukopenia; some have had elevations of LDH. As with other benzodiazepines, periodic blood counts and liver function tests are recommended during long-term therapy.

**CLINICALLY SIGNIFICANT DRUG INTERACTIONS:** Benzodiazepines produce CNS depressant effects when administered with such medications as barbiturates or alcohol.

**CARCINOGENESIS AND MUTAGENESIS:** No evidence of carcinogenic potential emerged in rats during an 18-month study. No studies regarding mutagenesis have been performed.

**PREGNANCY:** Reproductive studies were performed in mice, rats, and 2 strains of rabbits. Occasional anomalies (reduction of tarsals, tibia, metatarsals, malrotated limbs, gastroschisis, malformed skull and microphthalmia) were seen in drug-treated rabbits without relationship to dosage. Although all these anomalies were not present in the concurrent control group, they have been reported to occur randomly in historical controls. At 40mg/kg and higher, there was evidence of fetal resorption and increased fetal loss in rabbits which was not seen at lower doses. Clinical significance of these findings is not known. However, increased risk of congenital malformations associated with use of minor tranquilizers (chlordiazepoxide, diazepam and meprobamate) during first trimester of pregnancy has been suggested in several studies. Because use of these drugs is rarely a matter of urgency, use of lorazepam during this period should almost always be avoided. Possibility that a woman of child-bearing potential may be pregnant at institution of therapy should be considered. Advise patients if they become pregnant to communicate with their physician about desirability of discontinuing the drug. In humans, blood levels from umbilical cord blood indicate placental transfer of lorazepam and its glucuronide.

**NURSING MOTHERS:** It is not known if oral lorazepam is excreted in human milk like other benzodiazepines. As a general rule, nursing should not be undertaken while on a drug since many drugs are excreted in milk.

**Adverse Reactions,** if they occur, are usually observed at beginning of therapy and generally disappear on continued medication or on decreasing dose. In a sample of about 3,500 anxious patients, most frequent adverse reaction is sedation (15.9%), followed by dizziness (6.9%), weakness (4.2%) and unsteadiness (3.4%). Less frequent are disorientation, depression, nausea, change in appetite, headache, sleep disturbance, agitation, dermatological symptoms, eye function disturbance, various gastrointestinal symptoms and autonomic manifestations. Incidence of sedation and unsteadiness increased with age. Small decreases in blood pressure have been noted but are not clinically significant, probably being related to relief of anxiety.

**Overdosage:** In management of overdosage with any drug, bear in mind multiple agents may have been taken. Manifestations of overdosage include somnolence, confusion and coma. Induce vomiting and/or undertake gastric lavage followed by general supportive care, monitoring vital signs and close observation. Hypotension, though unlikely, usually may be controlled with Levarterenol Bitartrate Injection U.S.P. Usefulness of dialysis has not been determined.

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**Dosage:** Individualize for maximum beneficial effects. Increase dose gradually when needed, giving higher evening dose before increasing daytime doses. Anxiety, usually 2-3mg/day given b.i.d. or t.i.d.; dosage may vary from 1 to 10mg/day in divided doses. For elderly or debilitated, initially 1-2mg/day; insomnia due to anxiety or transient situational stress, 2-4mg h.s.

**How Supplied:** 0.5, 1.0 and 2.0mg tablets.





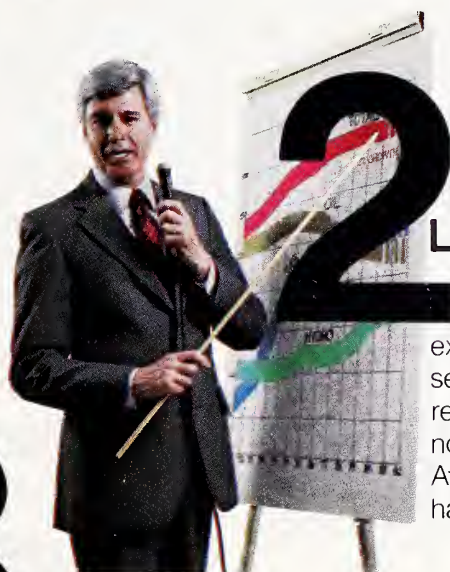
# Four practical reasons to prescribe **Ativan<sup>®</sup>** **for** (lorazepam) **Anxiety<sup>\*</sup>**



# 1

## No interaction with more than 300 drugs<sup>†</sup>

In clinical studies, Ativan was given concomitantly with hundreds of medications, including gastrointestinal and cardiovascular, with no reported interactions. Whereas the interaction of diazepam and cimetidine has been shown to cause increased sedation in patients taking both drugs, the clearance of Ativan is not delayed by Tagamet.<sup>‡</sup>



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# 3

## Not appreciably affected by aging

Unlike the long-acting benzodiazepines—diazepam <sup>®</sup>, chlordiazepoxide <sup>®</sup>, clorazepate <sup>®</sup> and prazepam <sup>®</sup> — the metabolism and clearance of Ativan are not appreciably affected by the aging process.



# 4

## Not significantly affected by liver dysfunction

Ativan<sup>®</sup> is metabolized in one simple step to an inactive glucuronide; its absorption and excretion are not significantly altered by cirrhosis or hepatitis. By contrast, the metabolism of diazepam and chlordiazepoxide has been reported to be significantly altered in patients with liver dysfunction.

<sup>\*</sup>Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic.  
All benzodiazepines, however, produce additive effects when given with CNS depressants, such as barbiturates or alcohol.

<sup>‡</sup>Tagamet (cimetidine) is a registered trademark of Smith Kline & French Laboratories, Division of SmithKline Corporation.

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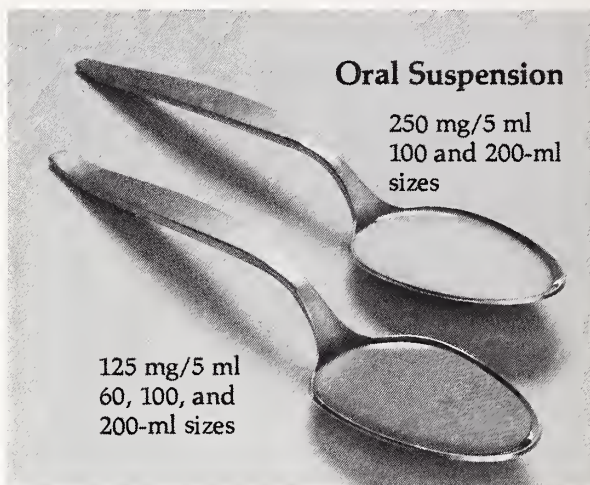
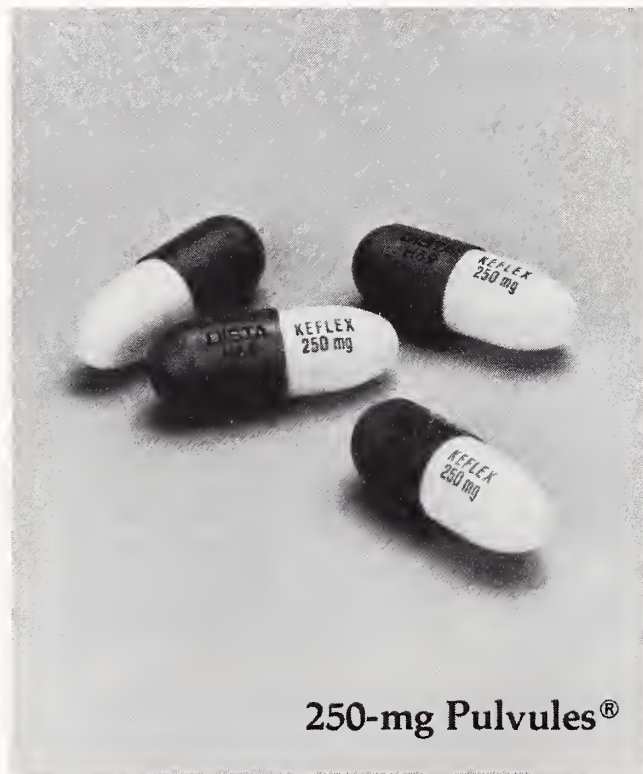
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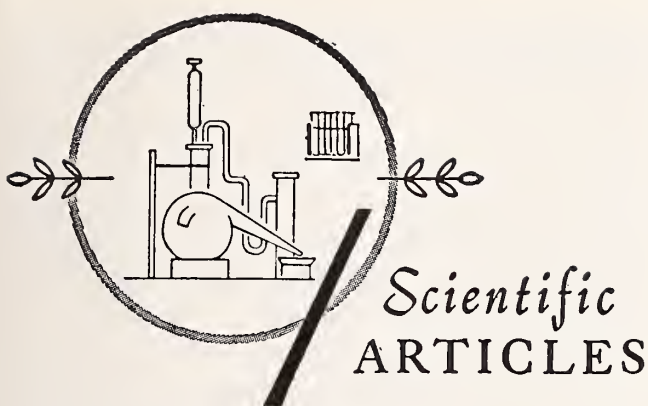


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# Colonoscopy

## *Diagnosis of Angiodysplasia*

ROBERT C. HAGAN, M.D. and RICHARD SKIBBA, M.D., Wichita

GASTROINTESTINAL bleeding of unknown cause is a difficult clinical problem. Vascular malformations of the gastrointestinal tract have recently been implicated with increasing frequency as a cause of acute and chronic gastrointestinal blood loss. This article describes three patients with gastrointestinal bleeding who were found, by colonoscopy, to have angiodysplasia of the right colon.

### Case Reports

*Case One:* A 69-year-old white male was admitted to the hospital for evaluation of anemia. He complained of intermittent melena and hematochezia. Physical examination yielded negative results except for a grade 3/6 systolic ejection murmur audible at the apex and left sternal border. The admission hemoglobin was 9.9 gm/100 ml, and hematocrit was 31.8% with hypochromic indices. Serum iron was decreased and the iron binding capacity was increased. Results of an upper gastrointestinal series and small bowel follow-through, barium enema, and sigmoidoscopy were negative. Colonoscopy was performed to the level of the cecum. The entire colonic mucosa was normal except for a 1 cm flat cherry red lesion in the cecum. Subsequent arteriography displayed early venous filling in the cecum consistent with angiodysplasia. At operation a definite lesion could not be found but a right hemi-

colectomy was performed. Careful sampling of the surgical specimen from the area identified at colonoscopy revealed the typical histologic features of angiodysplasia. The patient's hemoglobin remained normal one year after surgery.

*Case Two:* A 64-year-old white male was admit-

---

**Gastrointestinal bleeding of obscure origin is a difficult clinical problem. Angiodysplasia and telangiectasia must be differentiated to determine the appropriate treatment. Colonoscopy has proved effective in diagnosis of angiodysplasia.**

---

ted to his local hospital because of dizziness, fatigue, and dyspnea. He also complained of intermittent hematochezia of several months' duration. He had been hospitalized two and eight years previously for iron deficiency anemia but no cause was ever found. Results of physical examination were negative except for a grade 3/6 systolic ejection murmur heard throughout the precordium. Hemoglobin was 7.1 gm/100 ml, and hematocrit was 22% with hypochromic, microcytic indices. Serum iron was decreased and iron binding capacity was increased. Results of gastrointestinal contrast studies and sigmoidoscopy were all negative. Colonoscopy revealed the lesions seen in *Figure 1*. There were eight separate lesions present in the cecum and ascending colon. A right hemicolectomy was performed. No

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Address reprint requests to Dr. Skibba, The Wichita Clinic, 3244, E. Douglas, Wichita, KS 67208.



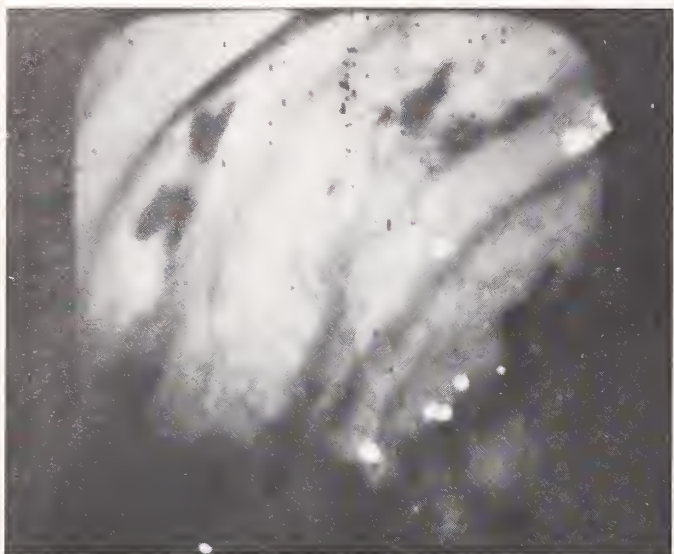


Figure 1. Diagnosis of angiodysplasia by colonoscopy.

lesions were detected grossly; however, microscopic findings were essentially the same as in the first case. The patient's hemoglobin remains normal one year later.

*Case Three:* A 76-year-old white male was admitted to the hospital because of melena and hematochezia which he had noticed for one month. Physical examination revealed no heart murmur, and results of abdominal examination were negative. The patient's admission hemoglobin was 12.6 gm/100 ml, and hematocrit was 39%. Results of upper gastrointestinal series were negative. A barium enema showed a 2 cm filling defect in the sigmoid colon. Colonoscopy revealed a sigmoid colon polyp which was snare resected. In the cecum a single 1 cm flat cherry red lesion was seen. Microscopic examination of a biopsy taken with hot biopsy forceps revealed the typical findings of angiodysplasia. Because of the small size of the lesion it was decided to treat the patient with transcolonoscopic cauterization. The patient's hemoglobin remains normal one year later.

## Discussion

Angiodysplasia of the colon is being recognized more frequently as a cause of acute and chronic gastrointestinal bleeding. The exact incidence of such lesions is not known nor is the cause. An association with aortic stenosis has been reported in the past.<sup>1</sup> It is not known whether the aortic stenosis is a factor in the development of these lesions or is just a factor in causing the lesions to bleed. These lesions are seen primarily in the elderly and are felt to be due to a degenerative process.<sup>2</sup> Others feel that vascular lesions of the intestinal tract exist in a spec-

trum ranging from the clearly hereditary lesions of the hereditary hemorrhagic telangiectasia syndrome to the acquired lesions secondary to irradiation, with angiodysplasia of the colon falling somewhere in the middle of the spectrum.<sup>3</sup> Small, early lesions of angiodysplasia have been reported in a substantial number of colons that were resected for cancer.<sup>2</sup> This suggests that angiodysplasia may be present in a significant portion of the elderly population.

Because the mucosal lesions appear to be secondary to dilated submucosal veins without mucosal ectasias, Boley *et al.*<sup>2</sup> suggested that the lesions are caused by chronic intermittent low grade obstruction to submucosal veins. They postulated that this dilation of submucosal veins, then of venules, capillaries and arteries of the mucosal vascular unit, ultimately led to loss of competence of precapillary sphincters, producing small arteriovenous malformations.

It is important to differentiate angiodysplasia from telangiectasias because angiodysplasias are normally localized and can be removed surgically whereas the telangiectasias are diffuse and surgery is not helpful. Grossly telangiectasias are small flat punctate lesions usually less than 5 mm in diameter and often multiple, diffusely affecting the entire intestinal tract. The lesions of angiodysplasia are usually larger, not as well circumscribed, and usually well localized. They have a predilection for the right colon, although they have recently been described in the upper gastrointestinal tract.

Microscopically the earliest and most consistent abnormality of angiodysplasia is the presence of dilated, often huge, submucosal veins. Although these lesions are frequently seen in the absence of mucosal involvement, the mucosal lesions are always associated with dilated veins in the adjacent submucosa. In lesions with more extensive involvement, smaller dilated veins are seen in the submucosa adjacent to the larger vessel traversing the muscularis mucosa into the deeper layers of the mucosa. Progressively more extensive lesions show increased numbers of dilated and deformed vessels in the mucosa until in the most severe lesions the mucosa is replaced by a maze of distorted, dilated vascular channels. These are often separated from the colonic lumen by a single layer of epithelium. This is probably the stage at which they bleed severely with minimal trauma.

The diagnosis of these lesions in the past has relied upon arteriography as these lesions cannot be seen with conventional radiographic studies and are

(Continued on page 345)

# Trophoblastic Disease

## A Five Year Experience

SULEIMAN A. ALSULEIMAN, M.D.; BYRON J. MASTERSON, M.D.;  
JAVIER MAGRINA, M.D. and H. C. CHENG, Ph.D., Kansas City, Kansas

GESTATIONAL trophoblastic disease is a neoplasm arising from the trophoblast of the human placenta. These tumors are, thus, grafts of fetal chorionic tissue surviving in a maternal host. The growth of this trophoblastic tissue produces chorionic gonadotropin (hCG), and the progress and growth of the tumor may be very closely monitored by following the level of this hormone in the serum.<sup>1</sup> Systemic chemotherapy in the treatment of gestational trophoblastic disease was first employed in 1956 and has become the model for the most successfully treated tumor in oncology.<sup>2</sup>

As the production of human chorionic gonadotropin is so closely related to the number of viable growing trophoblastic cells in the patient harboring this tumor, precise assays associated with treatment methods make immediate analysis of the effectiveness of the treatment available. This ability to determine if treatment is effective without waiting for the usual late findings in oncology of the growing tumor mass, impingement on vital organ functions, or destruction of organ parenchyma provides greatly improved results. In 1975, the Mid-America Trophoblastic Disease Center at the University of Kansas was established for the study and treatment of trophoblastic disease. During the subsequent five year period, 321 patients were monitored and more than 7,500 sera were analyzed (Table I). No patient who has been monitored in our laboratory has died from gestational trophoblastic disease during this time interval. Others have reported 100 per cent survival in patients with gestational trophoblastic disease in their material as well.<sup>3</sup> The general modes of treatment currently employed are outlined below.

An absolute requirement in the management of gestational trophoblastic disease is a very precise radioimmunoassay which is repeatedly standardized as to the reagents employed. The preciseness of this assay must be checked frequently against known standards, as well as blanks of prior sera to make certain that the results are very tightly controlled. The anticipated normals for our laboratory are shown in Figure 1. Note that the patient's titer should drop consistently after evacuation of the

mole, that plateaus should not be seen, and that the level should reach normal within ten weeks in the patient with nonmetastatic disease. Where the patient's titer does not decrease, is elevated, or rises late in the course of the disease, treatment is indicated.

**Undiagnosed gestational trophoblastic disease should be suspected when a woman of child-bearing age presents with unusual clinical symptoms. The advent of chemotherapy has effected a drastic improvement in prognosis for patients with this disorder.**

### Disease Types

The criteria for poor prognosis metastatic disease have been outlined by Hammond.<sup>3</sup> Poor prognosis is indicated by the presence of: (1) brain metastases; (2) liver metastases; (3) serum B-hCG titer in excess of 40,000 mIU/ml; (4) significant unsuccessful prior chemotherapy; (5) symptoms of malignancy in excess of four months; and (6) choriocarcinoma after term gestation. Patients not having these criteria are considered to have good prognosis gestational trophoblastic disease.

*Nonmetastatic Gestational Trophoblastic Disease:* Patients without evidence of poor prognostic signs may be followed with titers as indicated above and should meet the criteria for rapid fall of these titers as indicated. Where this does not occur, treatment should be undertaken with Methotrexate in one

TABLE I

Total number of patients	231
Number of men (testicular tumors)	13
Number of patients with lung metastasis	9
Number of patients with brain metastasis	1
Number of patients with titer more than 15 after ten weeks following evacuation	31



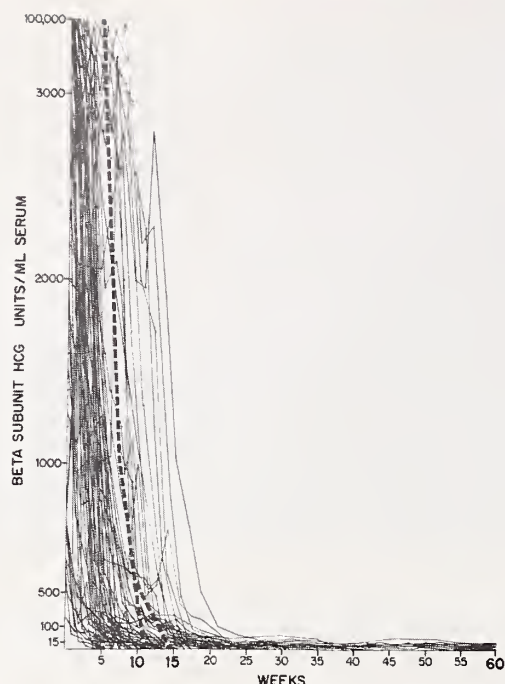


Figure 1. Plotted above are Beta Sub Unit HCG titers. The dotted line represents the usual regression line in our laboratory.

of two protocols. The patient should receive 20-25 mg/day for five days with intermittent rest periods if liver and renal function are adequate. This regimen should be repeated seven days after completing the course if the titers are elevated and unless prohibited by toxic effects of the drug. An alternate program being employed more recently is to treat the patient with Methotrexate 1 mg/kg/day intramuscularly on days one, three, five and seven of an eight-day protocol. Folinic acid, 0.1 mg/kg intramuscularly, is given on days two, four, six and eight, and the regimen is repeated at seven day intervals as long as the B-hCG titers remain elevated. There is essentially no toxicity with this drug regimen. We have had no persistent drug toxicity in any of the patients we have treated, although with the former regimen rash and mouth ulcerations are very common. All patients with elevated titers and the absence of any poor prognostic findings have usually responded to two to three courses of Methotrexate. All patients with lung metastases (9) have responded to this protocol as well. Thirty-one patients had titers persisting at more than 15 units after ten weeks, and these patients were also begun on this program.

**Poor Prognosis Trophoblastic Disease:** While we have had two patients whose initial titers were markedly elevated and one patient with brain metastases, all responded to chemotherapy. The treatment

of poor prognosis trophoblastic disease includes radiation therapy to the site of known brain metastases. The usual dose is 3,000 rads to the whole brain, or where hepatic metastases occur, 2,000-3,000 rads to the liver. Chemotherapy regimens employing Methotrexate, Actinomycin-D and chlorambucil during a five-day period should be used initially, with the drugs changed if the tumor does not respond to these regimens. The patient with brain metastases required several courses of multiple agent therapy, as well as radiation therapy, but did respond and except for persistent headaches is now clinically well. It should be noted that this patient entered with cranial nerve paralysis and impending cerebral herniation.

There have been three patients in our referral area who have died of trophoblastic disease during the last year and they merit some discussion. We saw none of these patients in our Center, nor did any have primary treatment in the greater Kansas City area. One patient with a long history of trophoblastic disease was from Iran. She received her treatment in London, but she would return to Iran before ever completing therapy. The recent political crisis in Iran prevented her from receiving appropriate treatment so that her disease was never completely irradiated, and she died of disseminated trophoblastic disease after arriving in the Kansas City area only a few days before death. The second patient presented to a local emergency room with signs of impending herniation of the pons and loss of consciousness with seizures. She underwent immediate cerebral decompression, but died in the recovery area. Autopsy revealed gestational trophoblastic disease. The third patient appeared in a local hospital emergency room and died shortly thereafter of thyroid storm due to gestational trophoblastic disease as well. It is important to remember that gestational trophoblastic disease may account for unusual intracranial lesion, pulmonary metastases, or disseminated cancer seen in the young woman of child bearing age. The exquisite sensitivity of this tumor to chemotherapy makes it possible for many of these patients to survive if early diagnosis and treatment are undertaken. This, unfortunately, was not the case with the above patients, and gestational trophoblastic disease was not suspected in two cases.

### Role of Surgery

The initial evacuation of suspected gestational trophoblastic disease deserves comment. Where the diagnosis is made by the patient presenting with small vesicles which she has expelled vaginally, with ultrasonography, or with injection of radio

opaque substance into the sonographically demonstrated mole, certain measures are worthy of comment.

- The patient should be typed and blood made available.
- An experienced anesthetist should be available to administer endotracheal anesthetic. The importance of the anesthetist is emphasized in recent case reports of massive embolization to the lungs during or immediately following evacuation of the uterus. Prompt heroic pulmonary measures are necessary for the patient's ultimate survival and a very experienced anesthetist must be available in this event. A recent patient transferred to us via Air-Vac Helicopter with massive embolization of the lungs survived because of the efforts of her surgeon and the anesthetist who accompanied the patient and provided endotracheal ventilatory efforts throughout the flight. Subsequently, chemotherapy and pulmonary treatment have produced a healthy patient in this otherwise disastrous circumstance.
- The patient should have a large bore intravenous needle in place.
- An effective suction machine with extra vacuum containers should be available because of the large volume of material that may be expelled.
- Forty units of Syntocinon should be available already diluted in intravenous fluids to be begun at the time evacuation of the uterus is undertaken.
- Curettage of the uterine cavity should be avoided until after the mole has been evacuated to avoid perforation of the soft uterus and the very soft and distended myometrium.

This will usually suffice for the normal surgical procedure needed in the care of hydatidiform mole. There is a place for hysterectomy in the management of nonmetastatic trophoblastic disease in the occasional patient who does not respond to chemotherapy. Poor vascularization of these tumor nodules seen in chorioadenoma destruens may account for the relative resistance to the usual chemotherapy and the number of courses of drugs may be minimized.<sup>3</sup> The reader should not misinterpret these observations however. We have employed hysterectomy only rarely and performed any additional surgical procedures, including repeat dilatation and curettage and other procedures, in less than 10 per cent of cases that we have seen in consultation.

The results of chemotherapy in gestational trophoblastic disease are rewarding. In this group of 321 patients, no patient has died of trophoblastic disease. This contrasts with the relatively poor prog-

nosis of trophoblastic disease prior to the availability of chemotherapy. The occurrence of three deaths of patients in our immediate area with undiagnosed trophoblastic disease indicates the lesions are still present and should be suspected whenever unusual clinical events appear in a woman of child bearing age. Prompt diagnosis will prevent clinical disaster attendant in untreated disease.

## Colonoscopy

(Continued from page 342)

often missed even at surgery.

Colonoscopy has recently been demonstrated to be a useful tool in the diagnosis of angiodysplasia<sup>4</sup> although some authors still question its usefulness. As can be seen from the cases presented, colonoscopy led to definitive diagnosis in our patients with angiodysplasia. Two of the patients were treated surgically and one patient with transcolonoscopic cauterization. Some authors suggest right hemicolectomy as the treatment of choice while others have suggested transcolonoscopic cauterization as the appropriate therapy. In most instances the lesions are fairly large, making cauterization dangerous.

## Summary

Angiodysplasia of the colon is a cause of acute and chronic gastrointestinal bleeding. The diagnosis of angiodysplasia can be made by colonoscopy. Angiodysplasia and telangiectasias need to be differentiated as the treatment is different. The treatment of angiodysplasia of the colon is generally a right hemicolectomy; however, the use of transcolonoscopic cauterization has been reported.

## References

1. Galloway, S. J.; Casarallaw, W. J. and Shimkin, P. M.: Vascular malformations of the right colon as a cause of bleeding in patients with aortic stenosis. *Radiology* 113:11, 1974.
2. Boley, S. J. *et al.*: On the nature and etiology of vascular ectasias of the colon. *Gastroenterology* 72:650-660, 1977.
3. Weaver, G. A. *et al.*: Gastrointestinal angiodysplasia associated with aortic valve disease: Part of a spectrum of angiodysplasia of the gut. *Gastroenterology* 77:1-11, 1979.
4. Skibba, R. M. *et al.*: Angiodysplasia of the cecum: Colonoscopic diagnosis. *Gastrointest. Endosc.* 22:177-179, 1976.



# Secondary Ischemia

## *Ischemic Problems Following Vascular Reconstruction*

JOSEPH E. BOSILJEVAC, M.D.\* and S. JIM FARHA, M.D.,† *Wichita*

AN AGGRESSIVE approach to patients with limb-threatening ischemia was emphasized in a prior article.<sup>1</sup> This philosophy can be carried over in the approach to patients who develop problems following vascular reconstruction — so-called secondary ischemia.

### Secondary Ischemia

Some patients present after arterial reconstruction with continuing ischemia. Reconstruction of the aorto-iliac segment is frequently the initial approach to treatment of multi-level arterial occlusion of the lower extremity. There are several reasons for this: proximal repairs have a greater longevity; it is hazardous to do a femoropopliteal or more distal bypass with poor inflow; and finally, the relative significance of proximal and distal lesions are difficult to evaluate. In the mid-1960s, surgeons re-evaluated their approach to arterial reconstruction. Prior to this time everything that was seen on the angiogram was bypassed at the initial operation. An interesting observation was noted in many patients who had concurrent aortofemoral and femoropopliteal bypasses; although they occluded their femoropopliteal grafts, many had no recurrent symptoms. This observation prompted surgeons to re-evaluate their approach to patients and the extent of the reconstruction.<sup>2</sup>

There have been attempts in the clinical laboratory to predict which patients will require subsequent downstream repair. In general, these have not been helpful. Sumner and Strandness,<sup>3</sup> among others, measured the ankle-arm index intraoperatively after aorto-iliac reconstruction and found that if it increased 0.1, 100 per cent of the patients improved. If it did not improve intraoperatively, 70 per cent still improved. They found that the ankle-arm index may increase up to several days postoperative-

ly. Initially, this is related to the peripheral vascular resistance, cardiac output, and the effects of general anesthesia. In some patients, it increases after several months, presumably due to formation of collaterals. On the basis of these findings, Sumner and Strandness recommend that patients be re-evaluated clinically to see what further needs to be done, but do not recommend treating all these lesions at the first operation.

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**An aggressive approach is recommended for treatment of primary or secondary ischemia, or for graft occlusion. Clinical experience and judgment on the part of the referring physician will further benefit patients undergoing arterial reconstruction.**

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Attempts have been made using the Doppler ultrasound to predict preoperatively which patients will require further downstream repair.<sup>4</sup> Evaluating the outflow using Doppler segmental pressure gradients, it was found that if one abnormal gradient was seen in the lower extremity distal to the aortofemoral reconstruction, then 25 per cent of patients had a poor result. If two abnormal gradients were seen, 70 per cent of patients had a poor result. There is some correlation here, but not enough accuracy to recommend concurrent distal repair. As far as measuring inflow, the thigh-brachial ratio has been measured using the Doppler, and the magic number has been described as .85. All patients with a thigh-brachial ratio less than .85 improved with aortofemoral reconstruction alone. However, 60 per cent of patients with a thigh-brachial ratio greater than .85 improved with aortofemoral reconstruction alone. Concurrent repair of distal lesions after aortofemoral reconstruction cannot be recommended on the basis of these measurements alone. Concurrent repair will be required rarely for claudication, occasionally for rest pain, and quite often for gangrene. The importance of clinical experience and judgment in approaching these problems is emphasized, since the clinical laboratory has not provided a foolproof method of prediction.

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Baird<sup>5</sup> reviewed his experience with 137 patients who underwent aortoiliac reconstruction and 210 patients who underwent aortofemoral reconstruction, with an emphasis on those requiring subsequent downstream repair. The results were similar in the two groups regarding mortality rate, operative time, prosthetic limb occlusion, graft infection, and false aneurysm formation. Twenty-eight per cent of the patients who had an aortoiliac reconstruction required subsequent downstream repair; only 14 per cent of those with an aortofemoral reconstruction required subsequent downstream repair. Adjunctive profundaplasty was performed with all aortofemoral reconstructions. Subsequent downstream repair was divided into (1) groin repair (profundaplasty or neointimal excision); and (2) femoropopliteal bypass. Groin repair was required in 16 per cent of the patients who had aortoiliac reconstruction and 4 per cent of those who had aortofemoral reconstruction. The incidence of subsequent femoropopliteal bypass was about 10 per cent for both groups at an average interval of nine months.

Baird concluded that aortofemoral bypass was superior to aortoiliac bypass in decreasing the number of patients requiring subsequent groin operations, but not more distal repair. Aortofemoral bypass is preferred over aortoiliac bypass in most cases for several reasons. First, later problems requiring subsequent downstream repair necessitate an abdominal procedure to treat the inflow problem or to improve runoff for the aortic graft. Second, angiograms in one plane do not accurately assess the iliacs. Third, although profundaplasty did not decrease the number of patients requiring subsequent femoropopliteal bypass, it provides a better runoff for the aortofemoral graft. This should improve the patency rates of these grafts.

Baird also measured intraoperatively various parameters to see if he could predict which patients would require subsequent downstream repair. When he measured the ankle-arm index, he found that if it increased 0.1 intraoperatively, every patient had a good result. However, this ankle-arm index could increase up to 10 days postoperatively so if it did not increase in the operating room, this did not mean anything. He measured flow rates through the graft and found that this was not helpful in predicting which patients would require more distal repair. Finally, he measured the interval for return of color to the foot and an audible Doppler pulse. He used a glass covered box over the feet which could be draped out of the operating field. This allowed visualization of the feet throughout the procedure. In legs with absent or minimal distal disease, flow

returned in two minutes, as measured by the Doppler probe over the pedal pulse, and a normal color within five minutes. If there was severe downstream disease, the flow was delayed for more than five minutes. Baird felt that this correlated best with patients requiring subsequent downstream repair. Again, this emphasizes the accuracy of the clinical examination. Combined with clinical experience and judgment, this is still the most useful tool.

### Graft Occlusion

Secondary ischemia may occur in patients who present with an occluded graft. A discussion of this problem is pertinent since more and more patients are being followed after arterial reconstruction. Aortofemoral patency rates have been described in the literature as 85 per cent after five years, and 66 per cent after ten years. The importance of graft occlusion, of course, is that these patients present a greater operative risk — possible emergency operations, scarring, progressive disease, and complications of generalized arteriosclerotic heart disease. Angiograms are necessary in these patients to assess inflow, to see what area is occluded, to look for possible aneurysm or defects in the graft, and also to evaluate the opposite limb.

Bernhard and Towne have shown that treatment of an occluded graft is usually possible.<sup>6</sup> They present a series of 50 patients who returned with graft occlusion after aortofemoral reconstruction. These patients presented at an average postoperative interval of 28 months; 35 presented with rest pain or necrosis, and 15 with incapacitating claudication. The superficial femoral artery was almost always occluded in these patients. If the graft occluded within the first six weeks following operation, this was always due to technical error, and was seen in three of the 50 patients. Occlusion after six weeks was seen in 47 of the 50 patients. This was due to progressive atherosclerosis in 42 patients and neointimal proliferation in five patients. Treatment of inflow was attempted by thrombectomy in 37 patients, and was successful for up to 18 weeks post-thrombosis. In 30 patients, the thrombectomy was successful the first time. In five patients, it was successful after the second thrombectomy. If the patient presented more than 18 weeks after the graft had been occluded, then another bypass was necessary (graft replacement or extra-anatomic bypass). Bernhard and Towne treated the outflow in all patients, using profunda patch angioplasty in 94 per cent of the cases. They found that a femoropopliteal bypass was infrequently needed to provide runoff. An 81 per cent success rate with thrombectomy and



profundaplasty was achieved, with a 92 per cent thirty day patency, 75 per cent three year patency, and a very low operative mortality rate — 2.6 per cent. This study demonstrates that something can be done for these patients and the results are fairly good. The low mortality rate reflects the fact that thrombectomy-profundaplasty can be done through a groin incision and under local anesthetic.

Neointimal proliferation may lead to occlusion when the fabric graft is larger than the arterial outflow tract. In these cases, a ring or collar of neointima forms, and this may lead to subsequent thrombosis. Many surgeons recommend a maximum 8 mm graft if the superficial femoral artery and the profunda are open; if only the profunda is open, a maximum 6 mm graft.

Kanaly,<sup>7</sup> Szilagyi,<sup>8</sup> and Crawford<sup>9</sup> review their extensive experience with arterial reconstruction, and all report about a 10 per cent late occlusion rate. Half of these were due to obstruction from progressive atherosclerosis or neointimal proliferation, 40 per cent due to false aneurysm, and 10 per cent due to infection. They reported a 12 per cent mortality rate for reoperation, but most deaths occurred in patients who were operated on for an infected graft. Overall, with re-operation for occlusion, 94 per cent of the survivors achieved good functional results.

These studies further confirm that something can be done for these patients with good results. This is important information to be related to the referring physician since many times the patients are followed by the referring physician after initial postoperative visits to the surgeon. If the graft occludes, an aggressive approach is indicated. In the majority of cases, something can be done and the results are good.

Since atherosclerosis is a progressive disease, patients require followup for several years postoperatively. Thrombosis of the femoral limb is most often caused by progressive atherosclerosis and inadequate outflow. Other causes should be considered, such as kinking of the graft, build up of pseudointima, or dehydration and hypotension. The importance of a good profunda in providing collaterals to the lower extremities is emphasized.<sup>10</sup>

Kanaly,<sup>7</sup> Szilagyi<sup>8</sup> and Crawford<sup>9</sup> all conclude that procedures directed at the aorta itself or the graft substitute proved more effective in relieving symptoms and restoring flow than did secondary procedures (such as femoropopliteal bypass) directed at more distal problems in the lower extremity. This is related to the tremendous collaterals provided by the profunda system. Furthermore, all authors mentioned that thromboendarterectomy has an unusually high incidence of re-operation for occlusion.

### Summary

An aggressive approach is recommended for patients presenting with primary and secondary ischemia, or with graft occlusion. Despite improvements in the clinical laboratory, clinical experience and judgment combined with the bedside examination provide the mainstay in diagnosis and treatment. Increased understanding by the referring physician should further improve results in patients undergoing arterial reconstruction.

### References

1. Bosiljevac, J. E. and Farha, S. J.: The ischemic extremity: Diagnostic and therapeutic techniques of an aggressive approach. *J. Kans. Med. Soc.* 82:273, 1981.
2. Dardik, H. *et al.*: Synchronous aortofemoral or iliofemoral bypass with revascularization of the lower extremity. *Surg. Gynecol. Obstet.* 149:676, 1979.
3. Sumner, D. S. and Strandness, D. E.: Aortoiliac reconstruction in patients with combined iliac and superficial femoral artery occlusion. *Surgery* 84:348, 1978.
4. Bone, G. E.: Value of segmental limb blood pressures in predicting results of aortofemoral bypass. *Am. J. Surg.* 132:733, 1976.
5. Baird, R. J. *et al.*: Subsequent downstream repair after aortoiliac and aortofemoral bypass operations. *Surgery* 82:785, 1977.
6. Bernhard, V. M. *et al.*: The reoperation of choice for aortofemoral graft occlusion. *Surgery* 82:867, 1977.
7. Kanaly, P. J. *et al.*: Late failures in reconstructive procedures involving the abdominal aorta. *Am. J. Surg.* 136:709, 1978.
8. Szilagyi, D. E. *et al.*: Secondary arterial repair. *Arch. Surg.* 110:485, 1975.
9. Crawford, E. S. *et al.*: "Redo" surgery after operations for aneurysm and occlusion of the abdominal aorta. *Surgery* 81:42, 1977.
10. Martin, Peter *et al.*: On the surgery of atherosclerosis of the profunda femoris artery. *Surgery* 71:182, 1972.

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# Complicated Diverticulitis

## Treatment With Cefoxitin Sodium

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A THREE-FOLD increase in the number of generally available antimicrobial agents in the past 20 years has not resolved major problems in the management of commonly occurring infections confronting the clinician, particularly in the hospital setting. In treating patients with abdominal anaerobic infections, there is a need for non-toxic, inexpensive, easily administered antimicrobics, clinically effective against the wide variety of bacteria comprising fecal flora.

Cefoxitin is a cephamycin antibiotic closely related in structure to the cephalosporins, and produced by cephamycin-C, a natural product of *Streptomyces lactamdurans*. It contains a methoxy group at the 7 position of the  $\beta$ -lactam ring; this group conveys resistance to the  $\beta$ -lactamases of both gram positive and gram negative bacteria, whether of anaerobic or aerobic species. Like other  $\beta$ -lactam antibiotics, cefoxitin is a bactericidal drug effective against a large number of gram-positive cocci as well as gram-negative bacilli. Its antimicrobial spectrum is similar to that of cephalothin, although it is somewhat less potent in-vitro against *Staphylococcus aureus* and somewhat more potent against *E. coli*, *Klebsiella pneumoniae*, and *Proteus mirabilis*. By virtue of its resistance to hydrolysis from gram-negative  $\beta$ -lactamases, cefoxitin inhibits some organisms characteristically resistant to cephalosporins, namely: *Serratia marcescens*, *Proteus vulgaris*, *Providencia sp.*, and *Bacteroides fragilis*. It lacks in-vitro activity against *Enterobacter cloacae*, and *Pseudomonas aeruginosa*. Pharmacologic studies have shown that the drug is excreted unchanged by the kidneys with a serum half-life of 40-60 minutes following intravenous administration, and is distributed in most body tissues. Thus far, it has been well tolerated in clinical use, with toxicity comparable to the cephalosporins.

This article reports the use of this new drug in two

patients with infectious complications of diverticular disease, usually caused by fecal flora including aerobic enterobacteriaceae (*E. coli*, *Klebsiella sp.*, *Proteus sp.*) and mixed anaerobes, particularly *Bacteroides fragilis* and streptococci. The proposed pathogenesis of intra-abdominal abscess and the

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**Infectious complications of diverticular disease are usually caused by fecal flora, including mixed aerobes and anaerobes. Two patients with diverticulitis responded to cefoxitin as a single agent after failure of earlier antimicrobial treatment. Recent experimental studies suggest that morbidity and mortality can be reduced with early use of antimicrobials effective against *Bacteroides fragilis*.**

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rationale for specific therapeutic intervention are reviewed; recent comparative clinical and laboratory studies of cefoxitin and other drugs are presented.

### Clinical Studies

**Case One:** A 64-year-old white female was hospitalized because of fever of 38.9C, diarrhea, and abdominal pain. Six days earlier she had developed four or five diarrheal stools daily and bilateral lower quadrant pressure with cramping before bowel movements and voiding. Four days before admission, amoxicillin was administered, and two days later sulfamethoxazole was added. The abdomen was slightly distended, and there was left lower quadrant tenderness and guarding without rebound or a palpable mass.

Extensive initial laboratory studies yielded normal results except for a white blood cell count of 16,300 including 31 bands and 63 segs; a barium enema showed marked spasm and diverticulosis of the sigmoid and descending colon. During the first two hospital days, the patient continued to be febrile to 38.7C. *Bacteroides fragilis* was recovered from one of the admission blood cultures and also from

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one of the three blood cultures obtained 48 hrs later. The organism was susceptible to cefoxitin, clindamycin and chloramphenicol, and was resistant to the penicillins and cephalosporins. Cefoxitin, 1 gm intravenously/four hrs was begun and amoxicillin and sulfamethoxazole were stopped.

The patient became afebrile 48 hrs later; blood cultures on the first, second, third, and fourth days after initiation of the drug were negative. A sonogram performed after 14 days of therapy revealed no abnormality and the left lower quadrant pain and tenderness had resolved. At that time diarrheal stools developed which showed fecal leukocytes greater than 100/high powered field (98% segs). Cefoxitin was stopped and clindamycin, 150 mg orally four times/day and Lomotil were given. She continued to improve, remained afebrile, and the diarrhea resolved.

*Comment:* This patient presented with diverticulitis and *Bacteroides fragilis* septicemia. She continued to be bacteremic for several days despite antimicrobial therapy, but the bacteremia cleared and clinical manifestations of infection abated promptly after cefoxitin was administered. Left lower quadrant tenderness disappeared, no mass developed, and studies to demonstrate a pelvic abscess yielded negative results.

Diarrhea developing during cefoxitin therapy should cause some concern since the antibiotic, like clindamycin, is not active against *Clostridium difficile* and *sordellii*, which are thought to overgrow in some patients and produce a toxin that causes pseudomembranous enterocolitis. However, the abnormal abdominal findings continued to improve each day, and it was thought that the fecal leukocytes most likely represented colonic drainage of a diverticular abscess; the diarrhea resolved and there were no other findings to suggest colitis or pseudomembrane formation. To date pseudomembranous enterocolitis has not been reported with cefoxitin therapy.

*Case Two:* A 78-year-old female was hospitalized because of a Colles' fracture and ventricular ectopy. During the first five days of hospitalization, therapy was directed to control the patient's discomfort from the fracture and to manage the arrhythmia. On the fourth day she developed fever of 38.9C, a white blood cell count of 16,000 with a left shift, and marked toxic granulation of the neutrophils. She complained of lower abdominal pain, and abdominal x-rays revealed multiple air fluid levels suggestive of a partial small bowel obstruction. Cultures of blood, urine, and stool were obtained, and cefamandole, 1 gm/six hrs was given intravenously. The patient continued to have fever during the next four

days, and the white blood cell count ranged from 17,000 to 22,000 with a marked left shift; lower abdominal pain persisted and diarrhea developed. Cefamandole was increased to 1 gm/three hrs, but no clinical change occurred. After 13 days of cefamandole administration the peak temperature was 39.2C and the white blood cell count was 17,100 with 15 bands and 75 segs. A barium enema showed marked spasm in the sigmoid colon with multiple diverticulae and a suggestion of a mass adjacent to, or within the wall of the sigmoid.

Cefamandole was discontinued and cefoxitin, 1.5 gms intravenously/six hrs was begun. Within 48 hrs there was dramatic clinical improvement with resolution of fever and diarrhea, and marked diminution in the left lower quadrant pain and tenderness. Within three days, the patient was having only three semiformal stools/day and denied abdominal pain, chills, or diaphoresis. Abdominal distention and tenderness had resolved, bowel sounds were normal, and the white blood cell count dropped to 7,300.

Seven days following initiation of cefoxitin therapy, a partial colectomy was performed. An inflammatory mass approximately 15 cm in diameter involving the sigmoid colon and pericolic tissues was resected. Pathologic studies of this tissue showed multiple small abscesses; cultures obtained during the surgical procedure grew only a single colony of *Candida albicans*. The postoperative period was uneventful and cefoxitin was discontinued ten days later.

*Comment:* Fecal bacterial flora are recognized to be significant pathogens in the development of pericolic cellulitis and abscesses resulting from perforation of colonic diverticuli. The organisms usually present are "microaerophilic" streptococci, the peptostreptococci, *Bacteroides fragilis*, and occasionally *Clostridium perfringens*. None of these organisms were cultured from the involved tissues in this patient, but she had received cefoxitin for seven days when the procedure was done. The lack of response to cefamandole and the dramatic improvement soon after institution of cefoxitin suggests that *Bacteroides fragilis* or other less susceptible anaerobic fecal flora were important pathogens in this process. Although cefamandole has good in-vitro activity against some pathogenic anaerobes, like penicillin, it lacks activity against the vast majority of strains of *Bacteroides fragilis*. It is speculative whether the extensive pericolic cellulitis and microabscess formation would have resolved with continued cefoxitin therapy, or would not have even developed had cefoxitin been given earlier.

## Discussion

In the past few years, well designed experimental



studies in laboratory animals have confirmed what clinicians caring for patients with intra-abdominal infections have known for some time: (1) These infections usually are due to mixed bacteria; (2) An early cellulitis phase leads to abscess formation; and (3) Surgical intervention to remove divitalized tissue, foreign bodies, and provide drainage of abscesses is the cornerstone of management. In some patients, multiple procedures, debridement, drainage, and diversion may prove necessary.

Recent data has provided new insights into the subtle interactions among the mixed bacterial fecal flora and suggests that certain organisms are important early in this process, whereas others become quite significant later. Moreover, despite the presence of over 300 strains, species, or groups of anaerobes colonizing the human body, only five (*Fusobacterium nucleatus*, anaerobic cocci, *Bacteroides fragilis*, *B. melaninogenicus*, and *Clostridium perfringens*) commonly are involved in these infections. It is suggested that the late abscess stage necessitating repeated surgical excision and drainage may be prevented if therapy directed at abscess-forming bacteria is instituted early.

The rat peritonitis model utilized by Gorbach, Bartlett, *et al.*,<sup>1</sup> in which a gelatin capsule with fecal contents is inserted into the peritoneal cavity of the experimental animal, has given the most convincing support for these conclusions. These investigators have now shown that in this setting aerobic gram negative organisms, particularly *E. coli*, are among the most common agents causing early septicemia. This is associated with high mortality in untreated animals. However, studies by Condon *et al.*,<sup>2</sup> using human feces in the same model, suggest that anaerobes may be equally important in the development of early septicemia. Rats given large doses of aminoglycosides and the common  $\beta$ -lactam antibiotics during the initial septicemia phase survived; but a high percentage of them developed intra-abdominal abscesses by day ten. These abscesses could largely be prevented by substitution of the  $\beta$ -lactam drug with clindamycin.

Additional experiments have determined the importance of aerobic gram negative rods, tissue necrosis, and foreign bodies in potentiating abscess formation in the presence of mixed anaerobic flora, *Bacteroides sp.*<sup>3-5</sup> in particular. On the other hand, recent reports confirm that *Bacteroides fragilis* may produce heparinases and collagenases and some strains have a polysaccharide capsule. These characteristics may explain why *Bacteroides fragilis*, uniquely among anaerobic organisms, is able to produce abscesses and septicemia in animal models without the usually potentiating factors.<sup>6, 7</sup>

Frequently,  $\beta$ -lactam antimicrobials and aminoglycosides are used together in serious infections which predictably involve mixed organisms. These include diverticulitis, non-gonococcal pelvic inflammatory disease, and infections following surgery of the large bowel and female genitourinary tract. The justification for such therapy is limitation and control of cellulitis and prevention of septicemia, recognizing the possibility that surgical intervention is often needed.

Based on experimental animal data, surgical drainage of abscesses might not be needed if clindamycin, or perhaps chloramphenicol were substituted for the  $\beta$ -lactam drugs currently available and widely used.<sup>8, 9</sup> On the other hand, both of these agents have potential toxicities which may be quite severe; perhaps it is in this setting that cefoxitin may have its greatest utility. Finegold's recently published studies indicated that 92 per cent of 47 strains of *Bacteroides fragilis* were susceptible to 32 micrograms or less of cefoxitin compared to about 17 per cent susceptibility to cefamandole at the same level.<sup>10</sup> Carefully designed controlled clinical trials comparing various treatment protocols remain to be done, although in this situation cefoxitin appears to have a decided advantage over the earlier  $\beta$ -lactam drugs.

Clinical studies in surgical patients with peritonitis, anaerobic cellulitis, and intra-abdominal abscesses reported by Rambo, *et al.*, have indicated cefoxitin's value as initial therapy in such situations; and the potential of replacing combination antibiotic therapy is suggested.<sup>11</sup> One must keep in mind that in all such studies, it is difficult to draw conclusions about antibiotic effectiveness because of the limited number of patients observed and the large number of clinical and disease variables.

Antibiotic therapy in any combination increases the potential for toxic reactions, and in the case of intravenous treatment of serious infections, it is becoming prohibitively expensive. This is due not only to the cost of individual drugs, but also to the cost of ad-mixture setups. The expense of intravenous administration of two antibiotics, requiring eight or more infusions, easily may exceed \$100/day. On a weight basis, cefoxitin is somewhat more expensive than some highly effective drugs marketed earlier, but substantial savings for the patient may occur if it is used successfully as a single agent. Experimental data are favorable in this regard,<sup>9, 12</sup> but more patient studies are needed. Timely surgical intervention will be needed for decisive management in many patients, regardless of the effects of potent antimicrobials.

(Continued on page 369)



# Intra-Cranial Tuberculomata

## *A Multiple Recurrent Case*

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TUBERCULOMA of the brain is rare in the United States but a frequent occurrence in underdeveloped countries. We report a case of multiple recurrent intracranial tuberculomata in an elderly male and review the literature from both industrialized and less technologically advanced countries.

### Case Report

A 62-year-old male alcoholic was hospitalized with a productive cough and intermittent confusion. Numerous acid-fast bacilli were identified in expectorated sputum, and combination therapy with rifampin, ethambutol, and isoniazid was begun. The patient's poor mental status was initially attributed to hyponatremia (serum sodium, 120 mEq/L); however his electrolyte values returned to normal with fluid restriction but periodic confusion continued. While in the hospital he fell, sustaining a head injury. Following this incident, he became markedly confused and developed right pupillary enlargement with ptosis, right central facial palsy, and right hyper-reflexia with a positive Babinski sign suggesting subdural hematoma with third nerve entrapment at Kernohan's notch. Cerebral angiography revealed questionable elevation of the left middle cerebral complex with widening of the posterior temporal branches; no subdural lesion was seen. During the following three days the patient became increasingly lethargic and developed meningismus, right hemiplegia, and left-sided hemiparesis. Lumbar puncture disclosed clear, colorless cerebrospinal fluid with one cell/cm; protein, 96mg/dl; opening pressure, 270 mmHg; and closing pressure, 150 mmHg. Spinal fluid electrolytes were normal. India ink preparation and Ziehl-Neelsen acid-fast stain produced negative results. Electroencephalography (EEG) demonstrated marked slowing in the left fron-

toparietal area. Increased uptake in the left occipital area was seen with technetium<sup>99m</sup> brain scan. Computerized axial tomography (CAT) brain scan disclosed a left temporoparietal lesion enhanced by intravenous injection of iodinated contrast material

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**Tuberculoma of the brain is rare in the United States but occurs frequently in underdeveloped countries. Reported here is a case of recurrent nodular tuberculomata of the brain. Availability of potent antituberculous agents has greatly reduced mortality from this entity.**

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and consistent with either a primary or a metastatic brain tumor.

A left parietotemporal craniotomy was performed and a firm, gray-colored mass 1 cm in diameter was found subcortically in the angulate gyrus. There was massive edema in the adjacent cortical tissue. Microscopically the nodule exhibited caseous necrosis and granulomatous inflammation, and many acid-fast bacilli were seen. No mycobacteria were recovered with culture. Postoperatively, the patient's neurological status slowly improved, but he remained somewhat confused. He was maintained on anti-tuberculous therapy and eventually was discharged to a chronic care facility.

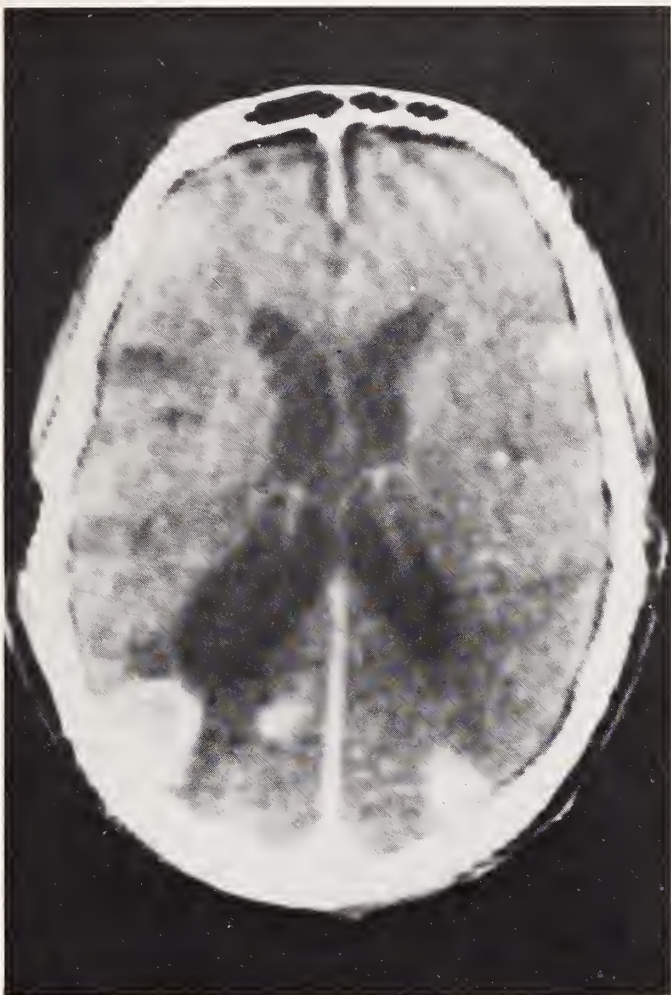
His condition remained stable for two years, but he was re-hospitalized following the development of focal seizures. Neurologic examination disclosed a mild right-sided hemiparesis, right homonymous hemianopsia, bilateral horizontal nystagmus, marked confusion, and inappropriate behavior. CAT brain scan demonstrated multiple lesions in both cerebral hemispheres (*Figure 1*) which were angiographically avascular. Cerebrospinal fluid examination was normal. A left-sided parieto-occipital craniotomy was performed and a firm mass 3 cm in diameter was removed (*Figure 2*). This lesion also showed caseous necrosis and a granulomatous inflammatory pattern consistent with tuberculoma. Postoperatively the patient has exhibited evidence of

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*Figure 1.* Computerized axial tomography scan showing several space occupying lesions in right and left cerebral hemispheres.



*Figure 2.* Intraoperative photograph of 3 cm diameter firm mass surgically removed.

persistent frontal lobe dysfunction; combination anti-tuberculous chemotherapy has been continued.

### Discussion

In the United States, tuberculosis occurs uncommonly and sporadically. However, in poorly developed nations such as India, 5-7 per cent of adults have focal pulmonary disease, and 38 per cent of children under 14 years of age react positively to tuberculin.<sup>1</sup> Thus, it is not surprising that extrapulmonary forms of tuberculosis are much more frequent in such less advanced societies. Following inhalation, the tubercle bacillus usually establishes itself in the well ventilated middle and lower regions of the lungs. During the weeks before hypersensitivity and cell-mediated immunity develop, bacteremic dissemination characteristically occurs. The apices of the lungs where oxygen tension is high and other well perfused organs such as kidney, brain, and bone are common sites of metastatic infection. When the

cellular immune response is adequate, these microscopic metastatic foci are converted to small granulomata many of which contain persistent dormant organisms. If the cellular immune response is inadequate, mycobacterial proliferation continues with progression of clinical disease.

Inability to contain metastatic foci in the brain results in tuberculoma formation, and in poor countries this progression of primary disease is seen principally in children. In contrast, central nervous system tuberculosis in the United States typically represents reactivation of dormant organisms in metastatic granulomata and generally occurs in stressed adults and in debilitated immunocompromised hosts.<sup>2</sup> Thus, both the pathogenesis of this lesion and the population it affects differ markedly between industrialized and underdeveloped nations. There are several large series of intracranial tuberculosis from underdeveloped countries in the medical literature,<sup>3-12</sup> and there have been numerous case



TABLE I

	Number of Cases	Age	Presenting Symptoms	Location	% Intracranial Tumors due to Tuberculoma
Dastur and Desai <sup>6</sup> (India, 1965)	107	75% less than 20 yrs 50% less than 10 yrs	Headache, vomiting, visual disturbance, seizures, and papilledema	37.9% in cerebrum 62.1% in cerebellum	30.5
Balaparameswararao and Dinkar <sup>5</sup> (India, 1971)	53	83% less than 20 yrs 37% less than 10 yrs	Same	39.3% in cerebrum 59.0% in cerebellum 1.7% in medulla	25.0
Sibley and O'Brien <sup>15</sup> (United States, 1956)	18	16-65 yrs 12% less than 20 yrs	Same	77% in cerebrum 23% in cerebellum (Several patients had multiple lesions)	0.7
Mayers, Kaufman, and Mittler <sup>14</sup> (United States, 1978)	12	2-76 yrs 16% less than 25 yrs	Same	75% in cerebrum 17% in cerebellum 8% in medulla	<1.0 very low (12 cases in 16-yr period)

reports from modernized countries.<sup>13-15</sup> *Table I* compares representative data from two studies in Asian Indians<sup>5, 6</sup> with the largest series from the United States.<sup>14, 15</sup> Tuberculoma accounts for approximately 25 per cent of all intracranial mass lesions in some underdeveloped countries, while the incidence in nations such as the United States is less than 1 per cent. The vast majority of Asian Indian patients are less than 20 years of age while most American patients are middle-aged or elderly. Presenting symptoms in both societies are typically those of increased intracranial pressure. In the Indian series, the majority of the lesions are located in the cerebellum whereas cerebral foci are more common in the United States. Active pulmonary tuberculosis accompanies intracranial tuberculoma in slightly more than half of cases regardless of the society.<sup>5, 14</sup>

EEG and technetium<sup>99m</sup> brain scan are not consistently reliable means of detecting tuberculoma.<sup>14</sup> Cerebral angiography usually demonstrates an avascular lesion.<sup>5</sup> CAT scan is by far the most popular current method of detection; in addition to the size and location of the lesion, it also is capable of identifying surrounding brain tissue edema. Neither angiography nor tomographic scanning, however, can accurately differentiate tuberculoma from abscess or neoplasm.<sup>14, 16</sup>

Our patient who presented with active pulmonary tuberculosis eventually developed localized signs of an intracranial mass. His advanced age and alcoholic

history make reactivation tuberculosis almost a diagnostic certainty. Carotid angiography, technetium<sup>99m</sup> brain scan, CAT scan, and EEG all demonstrated discrete lesions, and evidence of meningeal involvement was lacking. Although multiple tuberculomata have been reported in 1-6 per cent of Indian patients,<sup>5, 11, 17</sup> it is felt that only those lesions that produce symptoms require surgical removal. Long term antituberculous chemotherapy should shrink or at least prevent further growth of the remaining foci of viable organisms, and since the availability of potent antituberculous agents, mortality has been greatly reduced.<sup>14, 15</sup>

**References**

1. Udoni, P. M.: Incidence of tuberculosis in children. *Indian J. Child Health* 10:525, 1961.
2. Stead, W. W.: Pathogenesis of the sporadic case of tuberculosis. *N. Engl. J. Med.* 277:1008-1012, 1967.
3. Ansenjo, A.; Valladares, H. and Fierro, J.: Tuberculomas of the brain: Report of 159 cases. *Arch. Neurol. Psychiatr.* 65:146-160, 1951.
4. Arseni, C.: Two hundred and one cases of intracranial tuberculoma treated surgically. *J. Neurol. Neurosurg. Psychiatry* 21:308-311, 1958.
5. Balaparameswararao, S. and Dinkar, I.: Tuberculoma of the brain. *Int. Surg.* 57:216-220, 1972.
6. Dastur, H. M. and Desai, A. D.: A comparative study of brain tuberculomas and gliomas based upon 107 case records of each. *Brain* 88:375-396, 1954.
7. Gokalp, H.; Ozkal, E. and Tumer, B.: Intracranial tuberculomas. *Clin. Neurol. Neurosurg.* 79:228-236, 1976.
8. Gonzalez-Revilla, A.: Intracranial tuberculomas: Experience with ten consecutive cases. *J. Neurosurg.* 9:555-563, 1952.

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## Current COMMENT

H. B. LINDSLEY, M.D., *Editor*

### *Digitalis: Facts and Fallacies, Use and Potential Abuse*

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FACTORS influencing individual response and tolerance to digitalis have been clarified in recent years. Some previous beliefs are known to be incorrect; other new facts have been established. Because of common use and potentially serious toxic effects, these clarifications and additions to our knowledge of the drug are important.

The variables influencing the beneficial and toxic effects of two commonly used cardiac glycosides — digoxin and digitoxin — are considered in this review. Digoxin differs from digitoxin only by the addition of one hydroxyl group (digoxin = 12 hydroxy-digitoxin). This seemingly insignificant structural alteration results in marked differences in their "handling" by the body as seen in *Table I*. Despite the differences, the cardiac effects of these drugs are the same and the major indications for their use (increase in myocardial contractility and decrease in atrio-ventricular conductivity) do not differ. The shorter half-life of digoxin probably accounts for its preferential use by physicians. Knowing manifestations of toxicity will be largely gone in two to three days rather than one to two weeks is reassuring to both physician and patient if drug excess occurs. Variables in response and tolerance to these digitalis glycosides are summarized in *Table II*. Each will be discussed in some detail.

#### **Age of the Patient**

The incidence of digitalis intoxication increases with age out of proportion to the increased incidence

of heart disease in older individuals. Serum digoxin levels are higher in elderly patients than in younger patients taking similar doses. This is probably due to a combined effect of decrease in skeletal muscle mass and reduction in renal function. Decreased muscle mass causes a decrease in the volume of distribution of digitalis, making more drug available to the heart muscle. Renal function, as measured by creatinine clearance, decreases linearly after age 65. With waning renal function, excretion of digitalis also decreases.<sup>1</sup>

#### **Body Weight**

Pharmacologic studies demonstrate digoxin distribution corresponds closely to lean body weight. The lean body mass rather than the total weight should be used for estimating digoxin requirements.<sup>2</sup> Complaints of dyspnea, tachycardia, and edema may be due to patient obesity and poor conditioning rather than to congestive heart failure. Digitalis preparations cannot be expected to be efficacious in such situations.

#### **Alterations in Absorption**

*Oral Administration.* Experience in the early 1970s indicated marked variability in the dissolution of tablets of digoxin from various manufacturers. In 1974 the Food and Drug Administration established the requirement that digoxin tablets have a dissolution rate of greater than 65 per cent and be of consistent potency. With the vagaries of incomplete disintegration or variable drug content eliminated, gastrointestinal absorption has been better defined. Digitalis is passively absorbed in the small intestine and, to a lesser extent, in the stomach and colon.

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TABLE I  
METABOLIC PROPERTIES OF TWO DIGITALIS  
GLYCOSIDES

<i>Metabolic properties</i>	<i>Digoxin</i>	<i>Digitoxin</i>
Absorption	Appx. 80%	100%
Protein binding	20%	90-95%
Hepatic metabolism	Minimal	Prominent
Enterohepatic cycling	7%	26%
Renal excretion:		
Unchanged drug	30%	2-8%
Metabolites	3%	18% (most cardio- inactive)
Stool excretion	3%	17% (metabolites)
Serum half life	1½ days	5-7 days
Time for total excretion		
Normal	5-6 days	2-3 wks

Drugs enhancing gastrointestinal motility (*e.g.*, cathartics) may decrease absorption due to a “rapid transit” phenomenon. Conversely, substances decreasing motility (*e.g.*, antacids, anticholinergics, and narcotics) may allow longer contact with mucosal surface and lead to greater drug absorption.<sup>3</sup> Malabsorption syndromes due either to mucosal abnormalities (*e.g.*, sprue, celiac disease) or to pancreatic insufficiency do not significantly alter the absorption of digoxin or digitoxin unless profuse and persistent diarrhea exists. Binding resins (*e.g.*, cholestyramine, colestipol), neomycin, Kaopectate, and sulfasalazine (Azulfidine) decrease absorption. The exact mechanism of this effect is not fully clarified but is probably due either to binding of the drugs or to alterations in the absorptive capacity of the gastrointestinal mucosa. Nonabsorbable antacids taken simultaneously decrease digitalis absorption (presumably by binding of the drug). Note that antacids potentially have opposite effects; they may result in increased absorption due to decreased gastrointestinal motility or may decrease absorption if taken simultaneously with the drug. Although this is not a major problem, patients should be cautioned not to take digitalis within two hours after ingestion of antacids.<sup>3</sup>

Hepatic metabolism of digoxin and digitoxin is not significantly altered in patients with parenchymal liver disease or with biliary obstruction. However, because of enterohepatic cycling (the intestinal reabsorption of a drug excreted in the bile), this has more significance with use of digitoxin than digoxin (*Table I*). A practical and potentially important aspect of this phenomenon has been established. The quantity of drug excreted in the bile — digitoxin

TABLE II  
VARIABLES IN RESPONSE AND TOLERANCE TO  
DIGITALIS

Age of the patient.
Body weight.
Alterations in absorption.
Decrease in renal function.
Presence of electrolyte derangements or disturbances in acid base balance.
Associated medical problems.
Influence of other drugs being simultaneously taken.

more than digoxin — can be bound by anion exchange resins such as cholestyramine resulting in increased fecal excretion. Such therapy has practical application if toxicity with digitoxin occurs. The utility of binding resins for digoxin excess is less well established.<sup>3</sup>

*Parenteral Administration.* The diluent for parenteral digoxin is a markedly irritating substance. Intramuscular use not only causes the patient excruciating pain at the injection site but also initiates vasoconstriction, making absorption unpredictable. We do not believe digoxin should be given by intramuscular injection. If there is need for rapid administration (or if oral administration is impossible) digoxin should be given intravenously. The intravenous dose should be decreased since only 80 per cent of the oral dose is absorbed (*Table I*). This dose should be diluted in at least 10 cc saline and administered slowly during a 15-minute period.

Decrease in Renal Function

Since the kidneys are ultimately responsible for elimination of one-third of digitalis, decrease in renal function is a significant limitation to use. Kidney function decreases with age as noted above. Two other considerations deserve emphasis:

1. Serious heart disease decreases renal blood flow and thereby diminishes tolerance to digitalis. Obviously, primary renal disease may have a similar effect; and
2. Contrary to previous belief that renal excretion was due solely to glomerular filtration, recent evidence indicates a significant amount of digoxin is eliminated by secretory activity of the renal tubules. This function can be altered by other drugs to be subsequently discussed.

Electrolyte Derangements

Hypokalemia diminishes tolerance to digitalis and

leads to intoxication from small doses. Intracellular potassium concentration rather than serum potassium concentration appears to be the decisive factor.<sup>3</sup> Hypokalemia is commonly more evident in the electrocardiogram (prominent U waves) than in measurements of serum concentration. A normal serum potassium should be viewed with suspicion if suggestive evidence of hypokalemia is present in the ECG. The cause of acute potassium loss is obvious in some patients (*e.g.*, vomiting or diarrhea), but the chronic renal loss of potassium induced by diuretic agents can be more subtle and pernicious.

Chronic hyperkalemia seems to protect patients taking digitalis from toxicity. Animal studies indicate intracellular potassium excess inhibits the myocardial binding of the drug.

Calcium and digitalis have a synergistic relationship in their action on myocardial contractility. Calcium may act to increase the myocardial binding of digitalis. Digitalis promotes the intracellular movement of calcium ions necessary for the myocardial contractile process. Early reports suggested that hypercalcemic patients were at increased risk for digitalis intoxication with relatively low doses. Recent animal studies have not confirmed this. Enhanced sensitivity to digitalis does not occur except in extremes of hypercalcemia (30 mg/dl).<sup>3</sup> Thus, hypercalcemia is rarely clinically relevant; however, patients with hypocalcemia are resistant to digitalis therapy and may require larger than normal doses.

Hypomagnesemia may sensitize the myocardium to the effects of digitalis. Magnesium is a cofactor in the process of transcellular sodium and potassium exchange. Depletion of this cation probably contributes to intracellular potassium loss. Clinical conditions leading to depletion of magnesium may be due to decreased intake, *e.g.*, chronic alcoholism or lengthy illness preventing oral feedings with use of magnesium-free intravenous fluids administration; or excessive losses, *e.g.*, protracted diarrhea, diabetes mellitus, hyperparathyroidism, or chronic diuretic therapy.

### **Associated Medical Problems — Endocrine or Pulmonary Disease**

Significant alterations in tolerance to digitalis are seen in patients with thyroid disease. Hypothyroid patients exhibit increased sensitivity and also have an increased serum half-life of the drug; thus, digitalis intoxication is readily induced during the hypothyroid state. Conversely large doses may be tolerated during hyperthyroidism. Atrial fibrillation with a rapid ventricular response may occur in the thyrotoxic patient. Achievement of adequate sup-

pression of A-V conduction despite large doses of digitalis is difficult if not impossible. This is presumably because enhanced sympathotonia accompanying hyperthyroidism prevents the vagatonic depressant action of the drug on A-V conduction. Fortunately adrenergic excess can now be controlled with beta blocking drugs (*e.g.*, propranolol) and the risks of large doses of digitalis avoided.

A number of other endocrine abnormalities may affect digitalis tolerance. Electrolyte abnormalities are frequently underlying causes of toxicity associated with these disorders. Included are hypo- and hyperparathyroidism, diabetic acidosis, primary hyperaldosteronism, Addison's disease, and Cushing's syndrome.

Many factors contribute to digitalis intolerance in patients with serious chronic pulmonary disease. Acute hypoxia induces an excessive adrenergic response, and the presence of increased catecholamines contributes to the tendency of digitalis to cause atrial and ventricular dysrhythmias. Chronic hypercapnia causes disturbances in acid-base balance and electrolyte abnormalities, particularly hypokalemia. The signs and symptoms of acute or chronic respiratory disease, including supraventricular dysrhythmias, are frequently difficult to separate from the manifestations of left heart failure. Digitalis is rarely beneficial in treating acute or chronic cor pulmonale, and any possible improvement in right ventricular contractility is usually outweighed by potential toxicity.

### **Drug Interactions**

Despite the simultaneous use of quinidine and digoxin for at least 60 years, the important interaction of the two was not recognized until 1978.<sup>4</sup> Quinidine administration in a patient taking digoxin causes an increase in serum digoxin level frequently twice that present before its use.<sup>5, 6</sup> Serious digitalis toxicity may result if the two drugs are prescribed simultaneously, and the physician must remain alert to this possibility. Although the exact mechanism of this interaction is debated, current evidence indicates quinidine causes release of digoxin from extracardiac binding sites, making more available to the myocardium. The peculiarity of this relationship is emphasized by two additional facts:

1. Quinidine does not alter digitoxin serum levels;<sup>7</sup> and
2. Other antiarrhythmic drugs in common use, *e.g.*, lidocaine, procaine amide (Pronestyl) and disopyramide (Norpace), do not increase digoxin plasma levels and would be appropriate alterna-



tives to quinidine if the patient also needs digoxin.

Experimental studies in animals have shown that a number of analgesic drugs frequently utilized for arthritic discomfort raise serum digoxin levels significantly (approximately double the pretreatment level).<sup>8</sup> This appears to be due to decreased renal excretion. This phenomena occurs with salicylates in dosage sufficient to exceed 15 mg/dl, indomethacin (Indocin), and ibuprofen (Motrin). Of note, acetoaminophen (Tylenol) does not result in this effect. These data are preliminary and the effects have not been proven in humans; however, prudence would dictate use with caution in patients taking digoxin.

Administration of reserpine or guanethedine (Ismelin) causes the gradual depletion of catecholamines and results in potentiation of digitalis-induced vagal tone. This is of particular importance in patients with atrial fibrillation in whom digitalis has been used for control of ventricular rate. In these individuals simultaneous use of such drugs with digitalis may result in excessive A-V block and intolerable bradycardia.

Renal excretion of digoxin is accomplished both by glomerular filtration and tubular secretion. Spironolactone (Aldactone) and triamterene (Dyrenium) can block tubular secretion of the drug, decreasing total renal excretion and causing an increase in serum digoxin levels.<sup>9</sup> Significant hepatic dysfunction can exist without important change in tolerance to either digitoxin or digoxin; however, if the rate of hepatic metabolism is increased, important changes in digitoxin degradation may occur. Substances such as phenobarbital or diphenylhydantoin (Dilantin) prompt increase in hepatic microsomal enzymes. Since digitoxin is metabolized in great part by the liver (*Table I*) with biotransformation of the parent drug to cardioinactive substances, its efficacy may be significantly decreased. This influence is not of concern in patients taking digoxin.<sup>10</sup>

## Conclusion

Each year we learn more about digitalis. We now know that the two cardiac glycosides most often prescribed — digoxin and digitoxin — despite identical effects on the heart are, in reality, different drugs. In this review we have presented some of the

recent information regarding digitalis emphasizing particularly differences between these varieties. Undoubtedly next year will bring additional knowledge and clarification allowing the physician to use these drugs with more confidence and safety.

## Self-Assessment Questions

One or more answer may be correct.

1. Elderly patients are at special risk to develop digitalis intoxication because of:
  - a. Reduced liver metabolism of the drug.
  - b. Reduced renal clearance of the drug.
  - c. Reduced muscle mass.
  - d. Increased enterohepatic circulation of the drug.
2. The most sensitive test of myocardial potassium depletion is:
  - a. Serum potassium determination.
  - b. Serum magnesium determination.
  - c. Serum calcium determination.
  - d. The electrocardiogram.
3. Patients with hyperthyroidism require \_\_\_\_\_ doses of digitalis.  
Patients with hypothyroidism require \_\_\_\_\_ doses of the drug.
  - a. normal, larger
  - b. larger, normal
  - c. smaller, larger
  - d. larger, smaller
4. Addition of quinidine to the drug regimen of a patient taking digoxin will cause:
  - a. No change in the serum digoxin concentration.
  - b. A decrease in the serum digoxin concentration.
  - c. An increase in the serum digoxin concentration.
5. Which of the following statements is/are correct?
  - a. Simultaneous use of quinidine and digoxin increases the serum level of digoxin.
  - b. Drugs which induce hepatic microsomal enzymes decrease the efficacy of digitoxin.
  - c. Hypokalemia and hypomagnesemia increase tolerance to digitalis glycosides.
  - d. Hypercalcemia markedly decreases tolerance to digitalis.

(Answers on page 371)



# Tribute to Avicenna

## *One Thousand Years of the Art of Preserving Health*

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ALĪ IBN SĪNĀ, known in the West as Avicenna, was born in 980 AD in Persia and was the greatest intellectual of the Islamic Renaissance. He has been described as possessing the mind of Goethe and the genius of Leonardo da Vinci, and acclaimed the “Prince and Chief of Physicians.” Dante ranked him with Hippocrates and Galen in the *Divina Comedia*, and Chaucer honored him in *Canterbury Tales*. We know more about Avicenna than most ancient physicians from the autobiography of his early years; and his life story completed by Jujzāni, a student and companion.

The wealth and power of the Golden Age of Islam began in the eighth century AD, and extended from the border of China to Western Europe. A slow growth of rationalism gave Reason the highest importance in all but the most fundamental articles of faith. Said al-Farabi:

By Reason we apprehend all that elevates us and beautifies and enriches our life; . . . By it we acquire the medical art, to the great advantage of our bodies, and other useful arts. By it we come to knowledge of the Creator, the summit of our comprehension and chief source of our welfare.

Despite frequent political chaos, Islam was filled with a sense of mission, achievement, and progress. It was an age of superb architecture, fine pottery, beautiful silks, music, and poetry; talent had free scope and ability was in great demand. Art and science flourished, the professions were dignified, and their members became leading citizens. Such an age spontaneously creates great men and Avicenna, while intellectually supreme, was one of many.

Medicine attracted distinguished personalities; physicians were in great demand, honored, and often greatly rewarded. Many hospitals were built; medical education was systematically supplementing the apprentice system with formal lectures, clinical demonstrations, group discussions, and research. Ethical standards were of the highest tradition of responsibility and integrity; a court physician — who refused to prepare a prescription when he suspected evil intent — asked how he could defy prison and death by not carrying out the Caliph’s order said,

My religion and my profession. I have skill only in what is beneficial. I have studied naught else. My profession is founded for the use of my fellow men and only for their welfare.

By age ten years Avicenna had memorized the Koran and most of the Arabic and Persian literature, “and it was accounted a marvel.” He mastered mathematics, astronomy, law and philosophy, then turned his attention to medicine.

Medicine is not a difficult science, and in a short space of time, of course, I excelled in it so that the masters of physic came to read with me, and I began to visit the sick. I was then about sixteen years of age. During the period of hard practice and study which then ensued, I never once slept the whole night through. If a problem was too difficult for me, I repaired to the Mosque and prayed, invoking the Creator of all things until the gate that had been closed to me was opened and what had been complex became simple. Always, as night fell, I returned to my house, set the lamp before me and busied myself with reading and writing. If sleep overcame me or I felt the flesh grow weak, I had recourse to a beaker of wine, so that my energies were restored.



His father died when Avicenna was 21 years old; at that point the autobiography ends. Jujzāni continued:

While serving as a vizier to the Amir of Hamaden he disturbed the army probably with his philosophical teachings, his house was plundered, and he was forced into hiding where he worked on the *al Qanum*. The Amir was stricken with colic, Avicenna was summoned, effected a cure, and he was restored to his office. Later, when the Amir died Avicenna was forced into a quick departure.

Avicenna was a man of immoderate and excessive passions, who never married, led a lonely and dissatisfied life, with impressive good looks and a commanding presence; he had a violent temper and merciless scorn for the mediocre and conformity, was charming and witty in conversation, and was a formidable adversary in debate. His days were spent practicing medicine and advising the Amir, while evenings were spent enjoying music, poetry, and wine until his guests were asleep or exhausted; then Avicenna spent the rest of the night writing and finding solutions to the most difficult problems of philosophy and metaphysics. When challenged on his excesses, he replied he was interested in a life of the fullest breadth, not length, and said "God, who is exalted, has been generous concerning my external and my internal faculties, so I use every faculty as it should be used."

Avicenna wrote numerous medical books; the most famous was the *al-Qanum* or *Canon of Medicine*. It contains more than one million words in five volumes. Other comprehensive compendia of medicine had been written by Avicenna's predecessors but the *al-Qanum* was the final codification of Greco-Arabic medicine, one of the monumental works of all time. It was based on the principles of ancient Greek medicine with the addition of the teachings of Islamic physicians and Avicenna's observations. The fifth book was a formulary of drugs, a new Arabic contribution to medicine of major importance. Sir William Osler called it "the most famous medical textbook ever written." It became a "classic" as soon as it appeared, and was translated into Latin in 1175. The *Canon* was used in France and Germany into the seventeenth century and finally lost its authoritative status in the seventeenth century in Europe with a more accurate definition of the morbid states. The first book was translated into English in 1930. Only the Latin translations were from the original Arabic and are considered so poor that they do not reflect the grandeur of the *Canon*, giving the West a distorted view of Avicenna's teachings. In 1977 the Institute of the History of

Medicine and Medical Research of New Delhi assembled a team to develop an English translation of the *Canon*; the Institute considers it so important that it should be read by every medical student when it is completed.

Part of the first book of the *Canon* is devoted to the "Preservation of Health," under the title, "The Regimen Proper for the Physically Matured." These are a few examples:

Since the *regimen* for maintaining health consists essentially of the regulation of exercise, food and sleep, we may begin our discourse with the subject of exercise. We may define exercise as voluntary movement entailing deep and hurried respiration . . . for it causes the subtle heat to be increased and daily disperses whatever waste substances have accumulated; the movements of the body help to expel them, conveying them to those parts of the body whence they can readily leave it.

The value of *exercise*: it hardens the organs and renders them fit for their function; it results in a better absorption of food, aids digestion and, by increasing the innate heat, improves nutrition; it clears the pores of the skin; it removes the waste substances through the lungs; and strengthens the physique. Vigorous exercise invigorates the muscular and nervous systems.

*Massage*: its object is to disperse the waste matter formed in the muscles and not expelled by the exercise. It causes them to disperse and so remove fatigue. . . . A person should not go into the bath immediately after exercise. He should rest properly first.

The beneficial effects of *hot bath*: the induction of sleep; laxative action; cleansing action; digestive; drawing nutriment to the surface of the skin. Baths are beneficial for constipation and for removing lassitude.

*Diet*: In seeking to maintain health, care must be taken that the essential basis of the meal is not in medicinal nutrients like potherbs, fruits, and such. The meal should include: flesh, especially kid of goats, veal, and year-old lamb; wheat, which is cleaned of extraneous matter, and gathered during the healthy harvest without ever having been exposed to injurious influences; sweets of appropriate temperament; and fragrant wine of good quality.

A person should not eat unless hungry. Nor should he delay his meal until the appetite has passed off . . . nothing is worse than to eat to repletion (overfullness) during a time of plenty, after having been in a state of starvation during a time of famine, and vice versa. Great repletion is very dangerous in any case, whether in regard to food or to drink. For how often do not people overeat, and perish from the consequent choking of the channels of the body?

A small amount of movement or activity after a meal allows the food to descend from the stomach, especially if after this there is a desire to sleep. Mental excitement or emotion; vigorous exercise; these hinder the digestion.

No meal should be bulky enough to completely satisfy the appetite. One should rise from the table while some

(Continued on page 372)



Socio -

ECONOMICS

## A Medical Odyssey

### *Kansas Physicians Visit China*

GEORGE E. BURKET, JR., M.D., *Shawnee Mission*

CHINA has been perceived by past generations of Americans as a land of exotic temples and palaces and of spine-tingling intrigue. Our first-hand impressions have come from visits to the Chinatowns of San Francisco and New York. These impressions are often colored by the Americanization of these settlements and their people, plus the exaggerated plots of fiction writers. Following the revolution of the 1940s and the establishment of new social, political and economic systems, a new Peoples Republic of China has emerged. Guided by the teachings of Karl Marx but also deeply influenced by a culture dating back thousands of years, China is gradually joining a modern world.

Intent on retaining the deep rooted Chinese traditions, Chairman Mao and the Chinese Communist Party had a great deal of difficulty with the modernization process. Following the death of Chairman Mao, a new regime has come to power and acceleration of the modernization of the Peoples Republic of China seems inevitable, even at the expense of some socialistic principles. But one must not be deluded by an occasional, seemingly capitalistic endeavor; China is firmly under the control of the Communist Party which has only 35 million members out of a population of 950 million people. The Chinese people and their government exhibit no imperialistic tendencies — perhaps because they have internal problems to occupy their full attention.

Health care and the practice of medicine is no exception in the modernization process. Considerable information has filtered through to the United States about the work of the Barefoot Doctors and

about tertiary care in China. We have heard about the deeds of the Barefoot Doctors and their service to rural people. A great deal has been written about difficult surgery being performed using acupuncture anesthesia. But one must wonder what type of health and medical care these 950 million Chinese people have between these two extremes.

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**American impressions of Chinese culture tend to be distorted. A group of Kansas Physicians and their spouses recently toured China to gain an accurate perspective of the Chinese health care system.**

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With an intense curiosity about the mysteries of Chinese culture and historical sites and a determination to find out more about their entire health care system, a Kansas People-to-People Medical Mission left San Francisco on September 16, 1980 for a three week visit. The delegation consisted of ten physicians, four nurses, one social service director, and an attorney. (The attorney qualified as a physician's wife.) Members included Dr. and Mrs. Edward Brinton, Wichita; Dr. and Mrs. Virgil Brown, Sabetha; Dr. and Mrs. Dale Atwood, Kinsley; Dr. and Mrs. Robert Moore, Caney; Dr. and Mrs. Roy Coffey, Salina; Dr. and Mrs. Willard Kiser, Wichita; Dr. and Mrs. Fagan White, Russell; Dr. and Mrs. James Basham, Ft. Scott; and Dr. and Mrs. George Burket, Jr., Leawood and Kingman. Dr. and Mrs. David Capp, Redding, California, and Mrs. Mary Clancy, Berkeley, California, joined the Kansas group on this adventure and soon became good "Jayhawks" (Figure 1).

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Arriving in Hong Kong on September 17, 1980, the group spent three days in this interesting British Crown Colony before entering China. Four even made the boat trip to Macao and back. In addition to seeing Hong Kong Island, Kowloon, the New Territories, Repulse Bay and the boat people of Aberdeen, the delegation visited the Hong Kong Buddhist Hospital and one of the Vietnamese refugee camps. Medicine is socialized in Hong Kong, as in England, and consequently — although the hospital was founded by the Buddhist religious sect — it is now a government hospital and its physicians are on the government payroll. It is a general community hospital affiliated with one of Hong Kong's two medical schools and participates in residency training. The hospital is rather old and poorly equipped

by U. S. standards but the patients seem to get reasonably good care. Most common surgical problems are appendicitis, perforated peptic ulcer, and cholelithiasis secondary to liver fluke infestation.

Our visit to the refugee camp was most interesting as well as educational. This is one of the three refugee camps in Hong Kong and is inhabited by about 15,000 Vietnamese. The camps are supported and managed by various disaster or volunteer organizations but do have a great deal of additional support from the Hong Kong government and the United Nations. These are holding stations, and the refugees are eventually transferred to other countries about the world. The inhabitants of this particular camp seemed healthy and happy although their actual living and sleeping quarters are quite



*Figure 1.* Group at the Capitol Hospital, Peking, one of the teaching hospitals of Peking University College of Medicine. Front row: Dr. Capp; Dr. Feng, Vice Director of the hospital; Dr. Burket; Mrs. Burket; Mrs. Clancy; Dr. Brown; Dr. Kiser. Second row: Mrs. Capp; Mrs. White; M. Chou, Superintendent of the Nursing School; Mrs. Brown. Third row: Dr. Atwood; Mrs. Atwood; Dr. Li, Director of Medical Services; Mrs. Moore; Mrs. Kiser. Fourth row: Dr. White; Dr. Basham; Dr. Coffey; Mrs. Basham; Mrs. Brinton; Dr. Brinton; Dr. Moore. (Mrs. Coffey was not with the group at the time the picture was taken.)



crowded. They have a moderately well equipped ambulatory clinic staffed by a British general practitioner, three nurses, and several nurse's aides. Seriously ill patients are placed in Hong Kong hospitals. The children are all in schools conducted at the camp, and there are English language and hand-craft classes for adults as well.

On September 20, we departed Hong Kong by train for Guangzhou (Canton) to begin our visit to the Peoples Republic of China. With proper visa it is now possible to enter China from Hong Kong by train, by boat, or by air. To our surprise, the railway car in which we traveled was delightfully comfortable. It was air conditioned, had comfortable seats, closed television, lace curtains, and velvet drapes. We would probably have traveled on time had not the train hit a bicycle as we were passing through a village and this caused a delay of about 45 minutes.

The people are very friendly, and were as interested in us as we in them. Quite a few speak English, or attempt to speak English, since it is now taught on the government radio. We visited many interesting places in Guangzhou and Fishan, the beautiful West Lake and its accompanying attractions in Hangzhou, the Bund along the Wangpu River of Shanghai, and saw the tremendous numbers of ships coming and going from all parts of the world to trade with China. We visited the Great Wall near Peking, the Forbidden City, the Summer Palace, the Mao Memorial Tomb, and the huge Peoples Hall of Congress. We attended circuses, acrobatic shows, concerts, and Chinese Opera. Imagine our surprise when "Oh, Suzanna" was played at one of the concerts. However, in this article we will focus on health and medical care.

It was the delegation's good fortune to visit and learn about the complete spectrum of health and medical care in China from the Barefoot Doctors to the number one teaching hospital of the University of Peking. This necessitated our leaving the cities and traveling into the country to small villages to learn first hand about work groups, brigades, communes, counties, and provinces the size of which determines the components of an integrated health and medical care system. Several work groups constitute a brigade and number from 200 to 1000 people. Several brigades make up a commune which may have a population of 5,000 to 50,000 and have within it more than one small village. Several communes make up a county, and a province contains several counties and cities. All are responsible to the government in Peking but have their own local government. Many communes have multiple activities

contributing to their economy such as agriculture (rice, cabbage, tomatoes, hogs, dairy cattle, chickens, rabbits, ducks, and geese) and small industries (shirts, jackets, toys, etc.).

The Barefoot Doctors work primarily at the work groups and brigade level although some are also present in commune facilities. The ones with which our delegation visited seemed to be bright, aggressive young women who were enthused about what they are doing. They were working in small clinics which are minimally equipped, but they also make house calls or field visits when necessary. These women are picked by the local governing body and sent for approximately one year's training. The Barefoot Doctor is not paid for the work she performs, but must do additional work the same as others to earn her pay. Their social position, however, is enhanced and they are highly respected by others. Their activities are primarily in preventive medicine but they do handle some acute episodic problems and dispense medicine for these problems. Some Barefoot Doctors also serve as mid-wives but there are also other mid-wives who do nothing else in the health care field. They are very active in contraception and in one of their small clinic waiting rooms there hung on the wall a neat framed and glassed-in display of all the available intrauterine devices and contraceptive tablets. (The Chinese are strongly encouraged to have only one or two children.) The medication they dispense is usually of the traditional herbal variety but they do use some western medicine as well. The herbs are usually ground into powders or boiled into a brew or solution. The Barefoot Doctors send patients whose problems are beyond their scope of care (including difficult deliveries) to the brigade or commune hospitals which are served by government trained, paid, and assigned physicians.

The brigade hospitals seemed the weakest link in the Chinese health care system. The one visited by our delegation in a rural area near Kuangzhou is a sad situation indeed. It is located in small old remodeled buildings and poorly equipped. There was a small operating room, also ill equipped, in which is performed such surgery as herniotomies, appendectomies, and cholecystectomies. The patients' rooms were in separate buildings and each contained three or four iron beds. There is no kitchen in this brigade hospital and meals are brought by relatives or friends. The pharmacy contained almost entirely traditional herbal medicine. A clinical laboratory consisted primarily of one microscope, but there is one room where an acupuncturist is kept quite busy.



Commune hospitals of from 80 to 100 beds were visited outside of Hangzhou and Shanghai. These hospitals are rather old appearing buildings although we were told that one was only 10 years of age. Furnishings are very plain but clean, and equipment although probably adequate would be minimal in the opinion of U. S. rural physicians. X-ray and clinical laboratories seem to meet their needs at this point in time. They are able to do blood gasses and chemistries but none of the sophisticated work done now in even our small rural hospitals in America. There are no intensive care units in the commune hospitals we visited. Both commune hospitals seemed adequately staffed by physicians and nurses. The physicians take care of ambulatory patients in a multi-specialty polyclinic very similar to the Soviet system. The education of these physicians will be discussed further on.

While in Hangzhou, we made a very interesting visit to the Railway Workers Sanitarium just at the outskirts of the city. This is a 150 bed rehabilitation and recuperation hospital used by railway employees. Most of the patients here are chronic cases with musculoskeletal problems but quite a few carried the diagnosis of "neurosthenia." They are being treated with various physical therapy modalities and many are treated with acupuncture. Hydrotherapy is used to the extremities, and in many cases this is accompanied by mild galvanic current that ionizes certain chemicals placed in the water which in turn are absorbed through the skin. We were rather surprised also to observe the use of "cupping" for certain vague types of abdominal complaints. The acupuncture department of this institution is quite active, and acupuncture is used for a great variety of complaints from arthritis to myopia. No substantial data relating to results was obtainable.

The next visit was to a rather large 250 bed Peoples District Hospital in Shanghai. (It would be comparable to a large general community hospital in an U. S. city.) Problem patients who cannot be cared for in one of the commune hospitals are referred to this hospital and it is prepared for most tertiary care. There are intensive care units here, but they are rather small and minimally equipped. Again the ambulatory patient is treated in a polyclinic which included a dental department.

The delegation's final visits were to two large hospitals of 400-600 beds in Peking. The first was the Capitol Hospital which simulates one of our large private city hospitals, but of course, in China is owned and managed by the government. It contains the only section in China that is reserved exclusively

for foreigners. This section is quite adequate but not luxurious. The vice president of this institution is a well educated, capable physician who speaks excellent English and was a delightful host. The Capitol Hospital is rather old but well maintained and efforts are being made to modernize it as funds become available. A complete range of service is available here, although tertiary care is emphasized. Although very little of the equipment compared to American standards, it does allow for proper tertiary care. Coronary, pulmonary, and surgical intensive care units are in use. X-ray and clinical laboratories are somewhat small for a large hospital, but equipment is new and seems to meet their need. For the past year, Capitol Hospital has had an affiliation with the medical school for graduate education only.

The second hospital visited in Peking was the First Teaching Hospital of Peking University Medical College. There are three hospitals used by Peking University for clinical teaching. This particular hospital is reminiscent of the old general hospitals in the United States where clinical medicine was formerly taught. The buildings are old, and the wards are large, containing 8-12 white iron beds, but in each section there are a few single bed rooms for critically ill patients. Like Capitol Hospital, this hospital is equipped for tertiary care and staffed by a complete range of specialty physicians.

Medical education and the modernization of medical care in the Peoples Republic of China was probably set back a full generation by the Cultural Revolution. The Gang of Four demanded a return to traditional medicine, sent most of the medical school faculties out to rural communes, closed some medical schools, and discouraged any modernization of hospitals. This suppression or oppression occurred during a period of almost ten years. Medical education and health care must now travel the long way back.

At present, Peking University accepts about 1000 students per class. The duration of undergraduate medical education in China is usually five years following high school. This consists of what is termed premedical preparation and then two years of clinical work. Most students then take one year of additional hospital work comparable to an internship. They then have no real choice as to what they will do. The majority are assigned to a polyclinic and hospital somewhere in China. Here, as in the Soviet system, they specialize by exclusion and not by several years of hospital training. They are expected to become proficient in a particular specialty by years of practice. The more fortunate have an older and more experienced physician in their de-

partment, who can serve as a preceptor. There is no specialty certifying system in China.

There are a few students who are selected to stay at the teaching hospitals and they do receive specific long term training in the various specialties.

All medical students must learn a certain amount of traditional herbal medicine. These medications are demanded by a large majority of patients and most physicians outside of the teaching hospitals use traditional medicine in 20-90 per cent of their practice. Our delegation was fortunate to be able to visit the Canton Institute of Chinese Traditional Medicine. Our host at this institution was its vice president and we had the opportunity to visit with several members of the faculty. This was a fascinating experience. Their uses of herbs were explained to us and we were taken to the herb garden containing 2000 different herbs. All are labeled. Students attending this particular institute are required to learn to use only 400. Only special students attend this particular school and usually remain for two years. The Institute is affiliated with a hospital where both traditional and western medicine are practiced. It is interesting to note that at the Institute there is a research division that is attempting to identify the active ingredients in the commonly used herbs.

It was also our good fortune to visit the Second Traditional Chinese Pharmaceutical Works while in Hangzhou. This is a modern appearing plant which prepares herbs in pills, elixirs, extracts and solutions, and suitably packages them. Some of the solutions are for intravenous injection. Here, also, there is an experimental unit seeking new uses for and new ways to prepare their products. United States pharmaceutical companies also seek herbs throughout the world for active ingredients that may be useful as new western drugs.

No discussion of Chinese Medicine could be complete without including acupuncture, and our group of physicians and nurses had the usual curiosity about its use. At every opportunity the use of acupuncture was observed or questions were asked. Acupuncture is not used in the large teaching institutions as it is in the brigade, commune, and chronic disease hospitals. It is not used in the treatment of foreigners at Capitol Hospital. Surgeons with whom we visited stated that it is used primarily for surgery above the shoulders (thyroidectomy, mastoidectomy, brain tumor, etc.). They state that it is effective but they do not know why. At one institution the mechanism of effect was carefully explained to us, using models, but the explanation did not fit with our

knowledge of physiology and anatomy.

We inquired about the much publicized thoracotomies performed with acupuncture anesthesia and were told by surgeons that it is not the preferred anesthesia for this procedure since it is necessary that the patient be carefully selected and carefully conditioned to breathe properly during the operation.

In the commune hospitals acupuncture is used most often in painful musculoskeletal conditions, but we were told that it is used for many other problems such as ailments of the eyes, ears, nose, throat, liver, lungs, and stomach. No controlled studies of effectiveness seem to be in progress, however, and as near as could be determined, results have not been clearly documented. One can state positively, however, that acupuncture is not in general use in surgery; it is effective for the relief of certain types of pain; therapeutic cures have not been accurately documented as yet; and the physicians in the teaching hospitals seem less enthusiastic about its use than those in the brigade and commune hospitals.

The Kansas People-to-People Medical Mission had a tremendously exciting and educational experience during their visit to the People's Republic of China. The delegation had as thorough a study of health care and medical care as possible in what seemed to be a short fourteen days. Twelve medical facilities were visited and first hand information obtained concerning China's entire health care delivery system, from the Barefoot Doctor to the large tertiary care medical school institutions. A socialistic government-controlled system extends all through the socialistic Republic. There is no private practice and personal physicians do not exist. The average Chinese has been programmed not to expect such care.

Apparently some type of health or medical care is universally available to all, be it from the Barefoot Doctor, the brigade clinic, the commune hospital, or the district hospital. It is equally evident, however, that the care does not, as a rule, measure up to the quality of care possible in the year 1980.

The Chinese doctors are quite cognizant of the deficiencies in their physical facilities and equipment and in some cases their training programs. They are very anxious to correct these deficiencies and to modernize as quickly as possible. However, the demand for traditional Chinese medicine runs deep in the culture and modernization depends on the blessings and support from a socialistic government whose priorities may be elsewhere.



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## *The President's Message*

The Kansas Medical Society Auxiliary is probably the most underused power potential that organized medicine has in Kansas. We have 1382 spouses out there who are members — the number should be much greater. These women are intelligent, potentially interested and committed people with a vast array of talents who are eager to help achieve the goals of the medical profession. Over the years the KMS Auxiliary has made enormous contributions in such areas as community health education and services, legislative activities, and fund raising for medical students and schools. Recently they have sponsored fund raising for the Ronald McDonald Houses in Kansas City and Wichita, which provide temporary housing for the families of pediatric cancer patients. But this is merely the beginning — many other possibilities exist where we could utilize the abundant abilities of our Auxiliary.

We, in the Medical Society, keep asking, "How can we get the Auxiliary involved in additional important projects?" Meanwhile the Auxiliary asks "How can we get the Medical Society to involve us?" The solution to both problems is identical: better communication. One way to achieve better communication is to include Auxiliary members on KMS committees. I strongly endorse Dr. Phillip Godwin's invitation for physicians' spouses to participate in this way. The KMS has 26 committees



addressing a wide variety of issues. A great number deal with matters that are particularly in need of the empathy and understanding that our spouses can provide. We have excellent resource people in the midst of our Auxiliary — just look around your own area. I think we have the right people out there for almost any job.

One more thought: Certainly the KMS and the KMSA can be mutually helpful to one another by "talking up" each other's respective membership. The greater number we both become, the more clout we each will have!

Fraternally,

*Herman W. Hiesterman M.D.*

*President*



## PRN

As the new management at the Greater Potomac Polyclinic, Receiving Hospital, and Rehabilitation Center (formerly Pennsylvania General but inflation has hit hospital names along with everything else) gets underway, its promised changes in method are becoming increasingly apparent as staff and patients are exposed to the actual experience. The most obvious effect so far has been a strong emphasis on surgery, primarily amputations although some transplants have been scheduled and a certain amount of cosmetic surgery is expected. Stringent dietary principles are being promoted, not only on in-patients but in going-home instructions to those being released — as many are expected to be.

The business office has betrayed some nervousness — professing great accord with the new policies but privately expressing concern about this matter of letting people out before their accounts are settled. (The management seems committed to the belief that if the patient gets out and back to work, there is greater chance of the bill being paid.) Housekeeping is maintaining a low profile, concerned about rumors of drastic reductions in staffing and demands for its services but comforted by the thought that it is safely entrenched since no one else knows where things are kept (especially the skeletons). The personnel office and social services are still looking dismal and seeing evil portent in every pronouncement and directive issuing from the tower but grateful for the fact that implementation of the changes will take enough time that they can devise new ways to be retained.

While the GPPRHRC has had an outstanding record of service over the years, patients have become openly critical of the previous management's commitment to herbal medicine and incantations, especially since the costs were constantly increasing and, honestly no one was getting well — or is that, no one was getting well honestly? Anyway, it has been an

open secret that the institution's books have been out of whack for some time since the prices of things were going up before the bookkeepers could get them down on the ledger sheets. As is customary with changes in control, the new people have vowed to correct these problems and have displayed a rare obduracy in holding to their plans matched only by their optimism that they will succeed. It has been learned, however, that their request for a CT scanner has been delayed approximately two years, so they warn it will be that long before they can look inside their patients and see if their methods are really succeeding.

By which characteristically labored route we approach an updating of the state of the political scene as we move into the nitty-gritty stage of the administration's plans for our salvation. Any similarity to our comments of a couple of months ago is, of course, strictly intentional, and we justify the prompt return to the subject by the fact that more of the mechanisms upon which the administration is counting have become delineated. The fact that they are by no means final is no retardant — is, in fact, a stimulant — to speculations as to the ultimate form of our governmental functions. The campaign oratory is forgotten — except when failure to produce some promised miracle is cited by detractors. The happy blush of a sound victory is being replaced by the serious visage of concentrated effort. The media have been supplied with a heady mix of successes and set-backs better for their purposes than a total diet of one extreme or the other. The projected but still unsettled forms show evidence of firming up as we move toward reality but are still uncertain enough to invite the pseudowisdom of comment.

Already a new jargon is developing — “caps,” “block grants,” “flexibility.” The budget cutting as well as the (at this writing) undetermined tax cuts



will produce a reduction of federal government funds for presently supplied goods and services. Those agencies responsible for managing services of national scope will continue to provide some and return to the states funds to cover particular services according to particular guidelines. Beyond that, according to the formula, the federal government will not intervene. Elimination of much of the Washington action (it is hoped) will reduce the cost of implementing those programs considered essential, reduce federal regulations regarding them and affecting all those who participate — and, though we have not seen this as a stated intent of the system, should have a chastening effect on the production of federal legislation to meet new demands. This combination of removal, pruning, or redistribution would seem to be the basis for the economies at the federal level.

The utilization of these funds, the provision of the services, then, will be increasingly under state control. It would be misleading, however, to assume that this involves only the amount and manner of collection of funds and their disbursement. The directional patterns of 50 years won't be altered without some fundamental and philosophical changes as well. The effort that is immediately visible involves structures already existent — which is why the prospect of change has brought outcries from those enamored of — or unable to see beyond — the existing architecture. The first requirement, then, is to effect such changes with thought and objectivity, not just excisional zeal. The outcry against the purported changes has already been of many voices, including some physicians. The overriding fact is that the system, as it has grown, could not be supported indefinitely from an economic standpoint, however virtuous its social intent. It is no lack of social awareness to measure new programs or the viability of old by their economic supportability and results — something that has been out of style for some time.

But the most compelling immediate effect will be the transfer to state responsibility of much that has been controlled by federal edict. The process will still utilize some portions of the existing structure — we don't need to expect them to atrophy willingly — or go to the expense of building new when the old is serviceable. It does, however, call for scrutiny of the local mechanism of social function, the existing channels by which funds will reach the level of actual expenditure, the principles, attitudes, and purposes that will determine those expenditures.

It calls for an expansion of the role of organized medicine in the plans for the provision of medical

services. The medical profession must play an increasingly responsible role in the operation of such a system as it gets closer to home. This is not to discount the efforts and accomplishments of medicine in the past but anticipation of a different character to the process as it is relieved of federal regulations and reorganized with state controls. The medical profession has always been involved at the national level — and will continue to be — but the individual physician has felt little if any ability to influence — or even understand — much of what has gone on there. This change in provision of funds and services to the state level should bring to each physician an awareness of greater need for involvement — at the personal level, in county society activities, local specialty organizations, and certainly in the state society.

The world of regulation will not disappear. Each of us is regulated by his own physiologic economy, by domestic relationships, by local and ever extending contacts. The farther out the extension goes, the less it serves the individual's personal functional needs. This is why it is considered newsworthy when, intermittently, it comes to light that some individual has cut through and brought a personally involved effect on some problem. But for each of these, there are myriad instances of individuals drowning in "protective" regulations. If nothing else, the changeover should bring the control closer to true need consistent with local conditions and derived from more personal analysis. We must not be diverted by the introduction of spurious details or claims of loss of some essential thing which can, in fact, be replaced by less expensive or more effective measures.

It is ironical that despite the fact that medical service is one of the most vital elements of the social service function, its role has been subservient to the growth of social programs rather than one of leading the way. It must be admitted that this situation has developed in no small part because of the profession's failure to get involved at the point of origin, waiting, rather, until it was confronted with a plan and then entering into negotiatory contention. However valid its position has been professionally, it has been in a constantly defensive situation. The irony will be compounded if, at this moment of transition in the provision of medical and social services (though the negotiatory focus will be financial), the profession fails to exercise its painfully acquired political awareness, its social conscience, and the inherent characteristics of service embodied in the profession. This is not a matter of throwing

*(Continued on page 370)*

AT THE AMERICAN MEDICAL ASSOCIATION  
WE'RE INVOLVED IN MEETING  
THE IMPORTANT CHALLENGES AND  
RESPONSIBILITIES OF THE 80's.  
This is the first of a series of reports on  
major issues facing the medical profession. The purpose is to  
inform physicians on what the AMA is doing, on behalf of  
the profession and the public, to influence decisions that will  
affect health care in the next decade and beyond.

# CONTAINING THE COST OF HEALTH CARE

In the year ending March of 1979, expenditures for health (including health insurance, supplies, construction and research) totaled \$198 billion or 9 percent of the Gross National Product (HEW figures). Physicians directly affected at least \$130 billion of that sum through hands-on care as well as prescribed tests, drugs, and hospitalizations.

There is *little* that can be done to cut the \$500,000 to \$750,000 price of a computed tomography scanner, or the \$400,000 price of a radiation unit for cobalt treatments, or the wages of the hospital personnel who handle them. There is *little* that can be done to keep many of today's fixed expenses from getting bigger in the inflation of the 1980s.

But there are things that *should* be done, *can* be done, and *are* being done. Numerous hospitals, with physician support, have boosted their productivity while holding the *proper* line on hiring of personnel, examination of patients, length of patient stays, and so forth. "Proper line" means doing what can be done without cutting the quality and needed availability of care.

These cost-effective measures have been stimulated by a largely private initiative called the Voluntary Effort to Contain Health Care Costs—a coalition that includes the AMA, the two main hospital associations, health insurers, industry, labor, local government, and consumers. In 1978 and 1979 the Voluntary Effort was instrumental in saving consumers about \$3 billion, and in convincing the U.S. House of Representatives that the voluntary way was the "way to go," as opposed to the White House proposal for rigid cost controls that could have reduced the level of hospital care. Also in 1978-79,





in response to a plea from the then-president of the AMA, physicians kept their fee increases below the all-items component of the Consumer Price Index, despite steady erosion of their purchasing power. Right now the rate of fee increase is more than 3 points below. . .and the AMA is committed to keeping it *low*.

There are additional highways the health-care industry can take toward containment of costs—highways with a much clearer view of the road ahead than federal controls could allow. One route is insurable home care, when appropriate, as an alternative to relatively expensive institutional care. This has been advocated by the AMA as a formal policy.

Another route is for health insurers to offer consumers a greater marketplace choice in the patterns and costs of benefits. This was one of 48 recommendations made in 1977 by the AMA-sponsored National Commission on the Cost of Medical Care—a free standing body that included representatives from federal and state government, academia, and research as well as from industry, labor, health care, and insurance.

Still another highway is a long-term cost-containment program entailing changes in the ways hospitals, physicians, patients, and insurers behave and interact. The AMA is helping draw parameters for just such a program, in line with Cost Commission recommendations.

A working advantage of such voluntary approaches is that they are *natural* to the special character of health care—natural to its sensitivity, its interdependency, its complexity.

The 80s could well be decisive for the way in which health care is to be delivered in this country. We must have a strong and decisive voice in determining the direction of health care in the U.S. The AMA is that voice and your advocate. In order to continue our vital programs and activities and address the problems of our profession, we need your support. If you are not already one of the 221,000 physician or medical student members of the AMA, join us now!

**For details on how to join, send us your name and address on the attached business reply card, or write or call the AMA Office of Membership Development, American Medical Association, 535 N. Dearborn, Chicago, IL 60610, (312) 751-6410.**

## Complicated Diverticulitis

(Continued from page 351)

### Summary

We have presented the clinical courses of two patients with complicated diverticulitis; both responded to the use of cefoxitin as a single agent. In one patient the response to cefoxitin followed 13 days of failure using cefamandole; in the other, *Bacteroides fragilis* septicemia was cleared promptly when ampicillin and sulfamethoxazole were replaced by cefoxitin. A review of recent experimental studies of anaerobic infections suggests that morbidity and mortality can be reduced with early use of antimicrobials effective against *Bacteroides fragilis*.

### References

1. Weinstein, W. M.; Onderdonk, A. B.; Bartlett, J. G. and Gorbach, S. L.: Experimental intra-abdominal abscesses in rats: Development of an experimental model. *Infect. Immun.* 10:1250, 1974.
2. Nichols, R. L.; Smith, J. W.; Fossedal, E. N. and Condon, R. E.: Efficacy of parenteral antibiotics in the treatment of experimentally induced intra-abdominal sepsis. *Rev. Infect. Dis.* 1:302, 1979.
3. Gorbach, S. L. and Bartlett, J. G.: Anaerobic infections (second of three parts). *N. Engl. J. Med.* 290:1237, 1974.
4. Gorbach, S. L. and Bartlett, J. G.: Anaerobic infections (third of three parts). *N. Engl. J. Med.* 290:1289, 1974.
5. Cato, E. P. and Johnson, J. L.: Reinstatement of species rank for *Bacteroides fragilis*, *B. ovatus*, *B. distasonis*, *B. thetaiotaomicron*, and *B. vulgatus*: Designation of neotype strains for *Bacteroides fragilis* (Veillon and Zuber) Castellani and Chalmers and *Bacteroides thetaiotaomicron* (Distaso) Castellani and Chalmers. *Int. J. Syst. Bacteriol.* 26:230, 1976.
6. Kasper, D. L. *et al.*: Isolation and identification of encapsulated strains of *Bacteroides fragilis*. *J. Infect. Dis.* 136:75, 1977.
7. Onderdonk, A. B. *et al.*: The capsular polysaccharide of *Bacteroides fragilis* as a virulence factor: Comparison of the pathogenic potential of encapsulated and unencapsulated strains. *J. Infect. Dis.* 136:82, 1977.
8. Weinstein, W. M. *et al.*: Antimicrobial therapy of experimental intra-abdominal sepsis. *J. Infect. Dis.* 132:282, 1975.
9. Louie, T. J. *et al.*: Therapy for experimental intra-abdominal sepsis: Comparisons for four cephalosporins with clindamycin plus gentamicin. *J. Infect. Dis.* 135 (Suppl.):S18, 1977.
10. Sutter, V. L.; Kirby, B. and Finegold, S. M.: In vitro activity of cefoxitin and parenterally administered cephalosporins against anaerobic bacteria. *Rev. Infect. Dis.* 1:218, 1979.
11. Rambo, W. M.; Del Bene, V. E. and Delamar, D. K.: Cefoxitin therapy for surgical patients. *Rev. Infect. Dis.* 1:195, 1979.
12. Drusano, G. *et al.*: Cefoxitin vs. clindamycin/gentamicin for penicillin-resistant anaerobic infection. Abstract #823, presented at the 19th annual ICAAC conference in Boston, October 1979.

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\*Data on file Parke-Davis Marketing Research Dept.  
\*\*Based on total prescriptions filled for hemorrhoidal  
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Hemorrhoidal Suppositories with Hydrocortisone Acetate

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**Description:** Each Anusol-HC Suppository contains hydrocortisone acetate, 10.0 mg; bismuth subgallate, 2.25%; bismuth resorcin compound, 1.75%; benzyl benzoate, 1.2%; Peruvian balsam, 1.8%; zinc oxide, 11.0%; also contains the following inactive ingredients: dibasic calcium phosphate, and certified coloring in a hydrogenated vegetable oil base.

Each gram of Anusol-HC Cream contains hydrocortisone acetate, 5.0 mg; bismuth subgallate, 22.5 mg; bismuth resorcin compound, 17.5 mg; benzyl benzoate, 12.0 mg; Peruvian balsam, 18.0 mg; zinc oxide, 110.0 mg; also contains the following inactive ingredients: propylene glycol, propylparaben, methylparaben, polysorbate 60 and sorbitan monostearate in a water-miscible base of mineral oil, glyceryl stearate and water.

Anusol-HC Suppositories and Anusol-HC Cream help to relieve pain, itching and discomfort arising from irritated anorectal tissues. These preparations have a soothing, lubricant action on mucous membranes, and the antiinflammatory action of hydrocortisone acetate in Anusol-HC helps to reduce hyperemia and swelling.

The hydrocortisone acetate in Anusol-HC is primarily effective because of its antiinflammatory, antipruritic and vasoconstrictive actions.

**Indications and Usage:** Anusol-HC Suppositories and Anusol-HC Cream are adjunctive therapy for the symptomatic relief of pain, itching and discomfort in: external and internal hemorrhoids, proctitis, papillitis, cryptitis, anal fissures, incomplete fistulas, pruritus ani and relief of local pain and discomfort following anorectal surgery.

Anusol-HC is especially indicated when inflammation is present. After acute symptoms subside, most patients can be maintained on regular Anusol® Suppositories or Ointment.

**Contraindications:** Anusol-HC Suppositories and Anusol-HC Cream are contraindicated in those patients with a history of hypersensitivity to any of the components of the preparations.

**Warnings:** The safe use of topical steroids during pregnancy has not been fully established. Therefore, during pregnancy, they should not be used unnecessarily on extensive areas, in large amounts or for prolonged periods of time.

**Precautions: General:** Symptomatic relief should not delay definitive diagnoses or treatment.

Prolonged or excessive use of corticosteroids might produce systemic effects.

If irritation develops, Anusol-HC Suppositories and Anusol-HC Cream should be discontinued and appropriate therapy instituted.

In the presence of an infection the use of an appropriate antifungal or antibacterial agent should be instituted. If a favorable response does not occur promptly, the corticosteroid should be discontinued until the infection has been adequately controlled.

Anusol-HC is not for ophthalmic use.

**Pregnancy**

See "WARNINGS"

**Pediatric Use**

Care should be taken when using the corticosteroid hydrocortisone acetate in children and infants.

**Dosage and Administration:** Anusol-HC Suppositories—

Adults: Remove foil wrapper and insert suppository into the anus. Insert one suppository in the morning and one at bedtime for 3 to 6 days or until inflammation subsides. Then maintain comfort with regular Anusol Suppositories.

Anusol-HC Cream—Adults: After gentle bathing and drying of the anal area, remove tube cap and apply to the exterior surface and gently rub in. For internal use, attach the plastic applicator and insert into the anus by applying gentle continuous pressure. Then squeeze the tube to deliver medication. Cream should be applied 3 or 4 times a day for 3 to 6 days until inflammation subsides. Then maintain comfort with regular Anusol Ointment.

**NOTE:** If staining from either of the above products occurs, the stain may be removed from fabric by hand or machine washing with household detergent.

**How Supplied:** Anusol-HC Suppositories—boxes of 12 (N 0071-1089-07) and boxes of 24 (N 0071-1089-13) in silver foil strips with Anusol-HC printed in black.

Anusol-HC Cream—one-ounce tube (N 0071-3090-13) with plastic applicator.

**Store between 59°-86°F (15°-30°C).**  
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**PRN**

(Continued from page 368)

down the gauntlet to the purveyors of social services. It is a matter of establishing, at a time of revision of policy and function, that physicians can and should have a primary voice in the determination of the conduct of the medical component.

It is both the role of medicine and the prospective changes that bring us to the title of these comments. There is probably no medical acronym used more frequently than PRN — nor more inaccurately since, over the years, the literal sense of necessity determining the course has given way to an interpretation of *ad libitum*. Perhaps this has been reflected in social legislation as well — measures initially established as necessary but growing and spreading *ad lib* as they were added to the legislative burden. It is time to rediscover the inherent limitations of *pro re nata*. — D.E.G.

**Intra-Cranial Tuberculomata**

(Continued from page 354)

9. Hizagi, I.: Tuberculoma of the brain: A clinical and angiographic study. *J. Neurosurg.* 20:378-386, 1963.

10. Odeku, E. and Adeboye, A.: Cerebral tuberculoma in Nigeria. *Trop. Geogr. Med.* 20:378-386, 1963.

11. Ramamurthi, B.: Experiences with tuberculomas of the brain. *Indian J. Surg.* 18:452-455, 1956.

12. Singh, G.; Pandya, S. K. and Dastur, D.: Pathogenesis of unusual intracranial tuberculomas and tuberculous space-occupying lesions. *J. Neurosurg.* 29:149-159, 1968.

13. Damergis, J. A.; Leftwich, E. I.; Curtin, J. A. and Witovsch, P.: Tuberculoma of the brain. *JAMA* 239:413-415, 1978.

14. Mayers, M.; Kaufman, D. and Miller, M.: Recent cases of intracranial tuberculomas. *Neurology* 28:256-260, 1978.

15. Sibley, W. A. and O'Brien, J. L.: Intracranial tuberculomas: A review of clinical features and treatment. *Neurology* 6:157-165, 1956.

16. Leibrock, L.; Epstein, M. H. and Rybock, J. D.: Cerebral tuberculoma localized by EMI scan. *Surg. Neurol.* 5:305-306, 1976.

17. Mathai, K. V. and Chandy, J.: Tuberculous infections of the nervous system. *Clin. Neurosurg.* 14:145-177, 1967.

## Digitalis

(Continued from page 358)

### Answers

1. b, c
2. d
3. d
4. c
5. a, b

### References

1. Doherty, J.: Digitalis glycosides. *Ann. Intern. Med.* 79:229-238, 1973.
2. Ewy, G. A. *et al.*: Digoxin metabolism in obesity. *Circulation* 45:810-814, 1972.
3. Marcus, F. I.: Current status of therapy with digoxin. *Curr. Probl. Cardiol.* 3:1-41, 1978.
4. Ejvinsson, G.: Effect of quinidine on plasma concentration of digoxin. *Br. Med. J.* 1:279-280, 1978.
5. Hager, S. D. *et al.*: Digoxin-quinidine interaction. *N. Engl. J. Med.* 300:1238-1241, 1979.
6. Doering, W.: Quinidine-digoxin interaction. *N. Engl. J. Med.* 301:400-404, 1979.
7. Ochs, H. R. *et al.*: Noninteraction of digitoxin and quinidine. *N. Engl. J. Med.* 303:672-674, 1980.
8. Wilkerson, R. D.; Mockridge, P. B. and Massing, G. K.: Effects of selected drugs on serum digoxin concentration in dogs. *Am. J. Cardiol.* 45:1202-1210, 1980.
9. Steiness, Eva: Renal tubular secretion of digoxin. *Circulation* 50:103-107, 1974.
10. Doherty, J.: Digitalis glycosides. *Ann. Intern. Med.* 79:229-238, 1973.

### Suggested Readings

1. Marcus, F. I.: Digitalis pharmacokinetics and metabolism. *Am. J. Med.* 58:452-459, 1975.
2. Leahey, E. B. *et al.*: The effect of quinidine and other oral antiarrhythmic drugs on serum digoxin. *Ann. Intern. Med.* 92:605-608, 1980.

## INTERLIBRARY LOAN FEES

Clendening Library has announced that interlibrary loan (ILL) transaction expenses will be charged to the user after July 1, 1981. The full breakdown of charges is not yet available, but guidelines are as follows:

- Items borrowed from health science libraries within Region 8 could be as much as \$5.00.
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Also beginning July 1, 1981, State Services will charge \$3.00 per ILL transaction for items loaned (original or photocopies) from Clendening Library's collection.

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### Tribute to Avicenna (Continued from page 360)

appetite or desire for food is still present. For such remnants of hunger will disappear in the course of an hour. Custom is to be observed in this regard, for a meal is injurious when it brings heaviness to the stomach, and wine is injurious when it exceeds moderation, and swims in the stomach . . . a short sleep after a meal is useful: one should lie first on the right side, and then on the left, and finally turn back again to the right side. If the body be covered with a number of wraps and the neck be raised, this will aid digestion.

White, light wine is best for those who are in a heated state, for it does not cause headache. Instead of a light, white wine, one may use a wine which has been clarified by infusing honey or bread in it. Old red wine is best for a person of a cold, phlegmatic constitution . . . as you know, old wine is like a medicine. New wine clogs the liver and produces a hepatic dysentery by giving rise to too much gas. The best wine to take is that which is clear, white, tending to a red tinge, of good bouquet, and neither tart nor sweet in taste, neither old nor new.

On *Sleep and the Waking State*: At present, we may say that sleep in moderation assists the vegetative faculties in their functions and brings the sensitive faculties into repose, and in so doing removes and restores them and thereby arrests the dissipation of the breath (the vital power) . . . healthy persons should pay attention to the subject of sleep; it must be moderate, properly timed, and excess must be avoided. On the other hand, they must avoid the injury resulting to mental and all other faculties when remaining awake too long . . . the best sleep is that which is deep; and that which occurs after the food has passed on from the upper part of the intestine.

Neatness and cleanliness contribute to mental clarity.

Therefore, we may say that the essential considerations in the art of preserving the health consist of maintaining equilibrium between all those various concomitant factors. But there are seven matters concerning which special care must be expended to insure just proportion: equilibrium of temperament; selection of the articles of food and drink; evacuation of waste matter; safeguarding the composite; maintaining the purity of the air respired; guarding against extraneous contingencies; and moderation in regard to the movements of the body and the motions of the mind, with which may be included sleep and wakefulness.

Avicenna was even more famous and influential in philosophy than his great fame in medicine, honored as "the second teacher after Aristotle," and he compiled his philosophy in a masterful volume, the *Kitab al-Shifa* (The Healing). Avicenna's approach to reconciling Aristotelian philosophy with the Moslem religion made it possible in later centuries for Maimonides' and St. Thomas Aquinas' similar efforts with Jewish and Christian theology. No Moslem or Oriental scholar has attained as high a position and as lasting an influence in the West as Avicenna.

A man as admired and respected as Avicenna excited jealousies and many enemies, who declared his medicine would not save his body any more than his metaphysics could save his soul. He lived under a cloud of menace saying, ". . . events befell me, and such trials and troubles came rushing upon me, that, had they befallen the mighty mountains, they would have cracked and come crashing to the ground."

Jujzāni completed his biography of Avicenna:

. . . when Ala Al-Dawla set out for Hamadhan, the Master went with him but his illness seized him again on the way, so that by the time he reached Hamadhan he knew that his strength had wasted away and that it was not sufficient to repel the illness . . . and would say, "the governor who used to govern my body is now incapable of governing, and so treatment is no longer of any use." . . . Then he passed away in the presence of his Lord and was buried in Hamadhan — so the sum of his years was fifty-eight. May God find his deeds worthy.

Avicenna is the link between the ancient physicians and modern medicine. His devotion to systematic classification and incisive inquiry set the standard for all physicians. The rational use of drugs dates from the time of Avicenna to which Islamic medicine made major contributions. We are all indebted to this brilliant, troubled man, Avicenna, born one thousand years ago.



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**Contraindications:** Individuals hypersensitive to it, or with the syndrome of nasal polyps, angioedema, and bronchospastic reactivity to aspirin, iodides, or other non-steroidal anti-inflammatory agents. Anaphylactoid reactions have occurred in such patients.

**Warnings:** Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Ulceration, perforation, and bleeding may end fatally. An association has not been established. *Motrin* should be given under close supervision to patients with a history of upper gastrointestinal tract disease, only after consulting ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be tried. If *Motrin* must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

Chronic studies in rats and monkeys have shown mild renal toxicity characterized by papillary edema and necrosis. Renal papillary necrosis has rarely been shown in humans treated with *Motrin*.

**Precautions:** Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If these develop, discontinue *Motrin* and the patient should have an ophthalmologic examination, including central visual fields and color vision testing. **Fluid retention and edema** have been associated with *Motrin*; use with caution in patients with a history of cardiac decompensation or hypertension. *Motrin* is excreted mainly by the kidneys. In patients with renal impairment, reduced dosage may be necessary. Prospective studies of *Motrin* safety in patients with chronic renal failure have not been done. *Motrin* can inhibit **platelet aggregation** and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy. Patients should report signs or symptoms of **gastrointestinal ulceration** or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema. To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged **corticosteroid therapy** should have therapy tapered slowly when *Motrin* is added. The anti-pyretic, anti-inflammatory activity of *Motrin* may mask inflammation and fever.

**Drug interactions.** *Aspirin*: used concomitantly may decrease *Motrin* blood levels.

*Coumarin*: bleeding has been reported in patients taking *Motrin* and coumarin.

**Pregnancy and nursing mothers:** *Motrin* should not be taken during pregnancy nor by nursing mothers.

### Adverse Reactions

The most frequent type of adverse reaction occurring with *Motrin* is gastrointestinal, of which one or more occurred in 4% to 16% of the patients.

#### *Incidence Greater Than 1% (but less than 3%)—Probable Causal Relationship*

**Gastrointestinal:** Nausea,\* epigastric pain,\* heartburn,\* diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of GI tract (bloating and flatulence); **Central Nervous System:** Dizziness,\* headache, nervousness; **Dermatologic:** Rash\* (including maculopapular type), pruritus; **Special Senses:** Tinnitus; **Metabolic/Endocrine:** Decreased appetite; **Cardiovascular:** Edema, fluid retention (generally responds promptly to drug discontinuation; see PRECAUTIONS).

#### *Incidence Less Than 1%—Probable Causal Relationship\*\**

**Gastrointestinal:** Gastric or duodenal ulcer with bleeding and/or perforation, gastrointestinal hemorrhage, melena, gastritis, hepatitis, jaundice, abnormal liver function tests; **Central Nervous System:** Depression, insomnia, confusion, emotional lability, somnolence, aseptic meningitis with fever and coma; **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme, Stevens-Johnson syndrome, alopecia; **Special Senses:** Hearing loss, amblyopia (blurred and/or diminished vision, scotomata, and/or changes in color vision) (see PRECAUTIONS); **Hematologic:** Neutropenia, agranulocytosis, aplastic anemia, hemolytic anemia (sometimes Coombs' positive), thrombocytopenia with or without purpura, eosinophilia, decreases in hemoglobin and hematocrit; **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure, palpitations; **Allergic:** Syndrome of abdominal pain, fever, chills, nausea and vomiting, anaphylaxis, bronchospasm (see CONTRAINDICATIONS); **Renal:** Acute renal failure in patients with preexisting, significantly impaired renal function, decreased creatinine clearance, polyuria, azotemia, cystitis, hematuria; **Miscellaneous:** Dry eyes and mouth, gingival ulcer, rhinitis.

#### *Incidence Less Than 1%—Causal Relationship Unknown\*\**

**Gastrointestinal:** Pancreatitis; **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities, pseudotumor cerebri; **Dermatologic:** Toxic epidermal necrolysis, photoallergic skin reactions; **Special Senses:** Conjunctivitis, diplopia, optic neuritis; **Hematologic:** Bleeding episodes (e.g., epistaxis, menorrhagia); **Metabolic/Endocrine:** Gynecomastia, hypoglycemic reaction; **Cardiovascular:** Arrhythmia (sinus tachycardia, sinus bradycardia); **Allergic:** Serum sickness, lupus erythematosus syndrome, Henoch-Schönlein vasculitis; **Renal:** Renal papillary necrosis.

\*Reactions occurring in 3% to 9% of patients treated with *Motrin*. (Those reactions occurring in less than 3% of the patients are unmarked.)

\*\*Reactions are classified under "Probable Causal Relationship" (PCR) if there has been one positive rechallenge or if three or more cases occur which might be causally related. Reactions are classified under "Causal Relationship Unknown" if seven or more events have been reported but the criteria for PCR have not been met.

**Overdosage:** In cases of acute overdosage, the stomach should be emptied. The drug is acidic and excreted in the urine, so alkaline diuresis may be beneficial.

**Dosage and Administration:** Do not exceed 2400 mg per day. If gastrointestinal complaints occur, administer with meals or milk.

Rheumatoid arthritis and osteoarthritis, including flares of chronic disease: Suggested dosage is 300, 400, or 600 mg t.i.d. or q.i.d. Mild to moderate pain: 400 mg every 4 to 6 hours as necessary for relief of pain.

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**CONTRAINDICATIONS:** Hypersensitivity to aspirin or codeine.

#### **WARNINGS:**

**Drug dependence:** Empirin with Codeine can produce drug dependence of the morphine type and, therefore, has the potential for being abused. Psychic dependence, physical dependence, and tolerance may develop upon repeated administration of this drug and it should be prescribed and administered with the same degree of caution appropriate to the use of other oral, narcotic-containing medications. Like other narcotic-containing medications, the drug is subject to the Federal Controlled Substances Act.

**Use in ambulatory patients:** Empirin with Codeine may impair the mental and/or physical abilities required for the performance of potentially hazardous tasks such as driving a car or operating machinery. The patient using this drug should be cautioned accordingly.

**Interaction with other central nervous system (CNS) depressants:** Patients receiving other narcotic analgesics, general anesthetics, phenothiazines, other tranquilizers, sedative-hypnotics, or other CNS depressants (including alcohol) concomitantly with Empirin with Codeine may exhibit an additive CNS depression. When such combined therapy is contemplated, the dose of one or both agents should be reduced.

**Use in pregnancy:** Safe use in pregnancy has not been established relative to possible adverse effects on fetal development. Therefore, Empirin with Codeine should not be used in pregnant women unless, in the judgment of the physician, the potential benefits outweigh the possible hazards.

#### **PRECAUTIONS:**

**Head injury and increased intracranial pressure:** The respiratory depressant effects of narcotics and their capacity to elevate cerebrospinal fluid pressure may be markedly exaggerated in the presence of head injury, other intracranial lesions or a pre-existing increase in intracranial pressure. Furthermore, narcotics produce adverse reactions which may obscure the clinical course of patients with head injuries.

**Acute abdominal conditions:** The administration of Empirin with Codeine or other narcotics may obscure the diagnosis or clinical course in patients with acute abdominal conditions.

**Allergic:** Precautions should be taken in administering salicylates to persons with known allergies: patients with nasal polyps are more likely to be hypersensitive to aspirin.

**Special risk patients:** Empirin with Codeine should be given with caution to certain patients such as the elderly or debilitated, and those with severe impairment of hepatic or renal function, hypothyroidism, Addison's disease, prostatic hypertrophy or urethral stricture, peptic ulcer, or coagulation disorders.

**ADVERSE REACTIONS:** The most frequently observed adverse reactions to codeine include light-headedness, dizziness, sedation, nausea and vomiting. These effects seem to be more prominent in ambulatory than in nonambulatory patients and some of these adverse reactions may be alleviated if the patient lies down. Other adverse reactions include euphoria, dysphoria, constipation, and pruritus.

The most frequently observed reactions to aspirin include headache, vertigo, ringing in the ears, mental confusion, drowsiness, sweating, thirst, nausea, and vomiting. Occasional patients experience gastric irritation and bleeding with aspirin. Some patients are unable to take salicylates without developing nausea and vomiting. Hypersensitivity may be manifested by a skin rash or even an anaphylactic reaction. With these exceptions, most of the side effects occur after repeated administration of large doses.

**DOSAGE AND ADMINISTRATION:** Dosage should be adjusted according to the severity of the pain and the response of the patient. It may occasionally be necessary to exceed the usual dosage recommended below in cases of more severe pain or in those patients who have become tolerant to the analgesic effect of narcotics. Empirin with Codeine is given orally. The usual adult dose for Empirin with Codeine No. 2 and No. 3 is one or two tablets every four hours as required. The usual adult dose for Empirin with Codeine No. 4 is one tablet every four hours as required.

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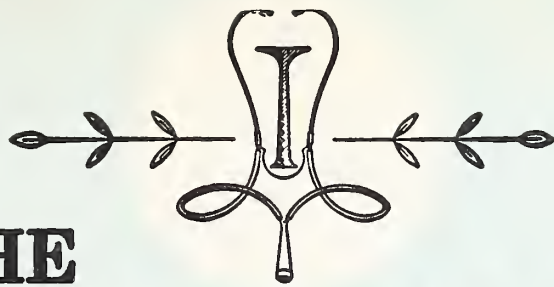
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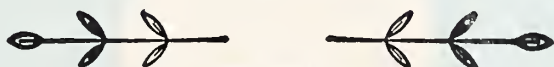
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NO. VIII



# The JOURNAL of the KANSAS MEDICAL SOCIETY

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These current issues, involving patient compliance or dependency-proneness, should be given careful scrutiny, for they may impede my overall therapeutic usefulness. As you know, a problem almost always involves improper usage. When I am prescribed and taken correctly, I can produce the effective relief for which I am intended.

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For a brief summary of product information on Valium (diazepam/Roche)® , please see the following page. Valium is available as 2-mg, 5-mg and 10-mg scored tablets.

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The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other anti-depressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation. The clearance of Valium and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

**Dosage:** Individualize for maximum beneficial effect. **Adults:** Anxiety disorders, symptoms of anxiety, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. **Geriatric or debilitated patients:** 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) **Children:** 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

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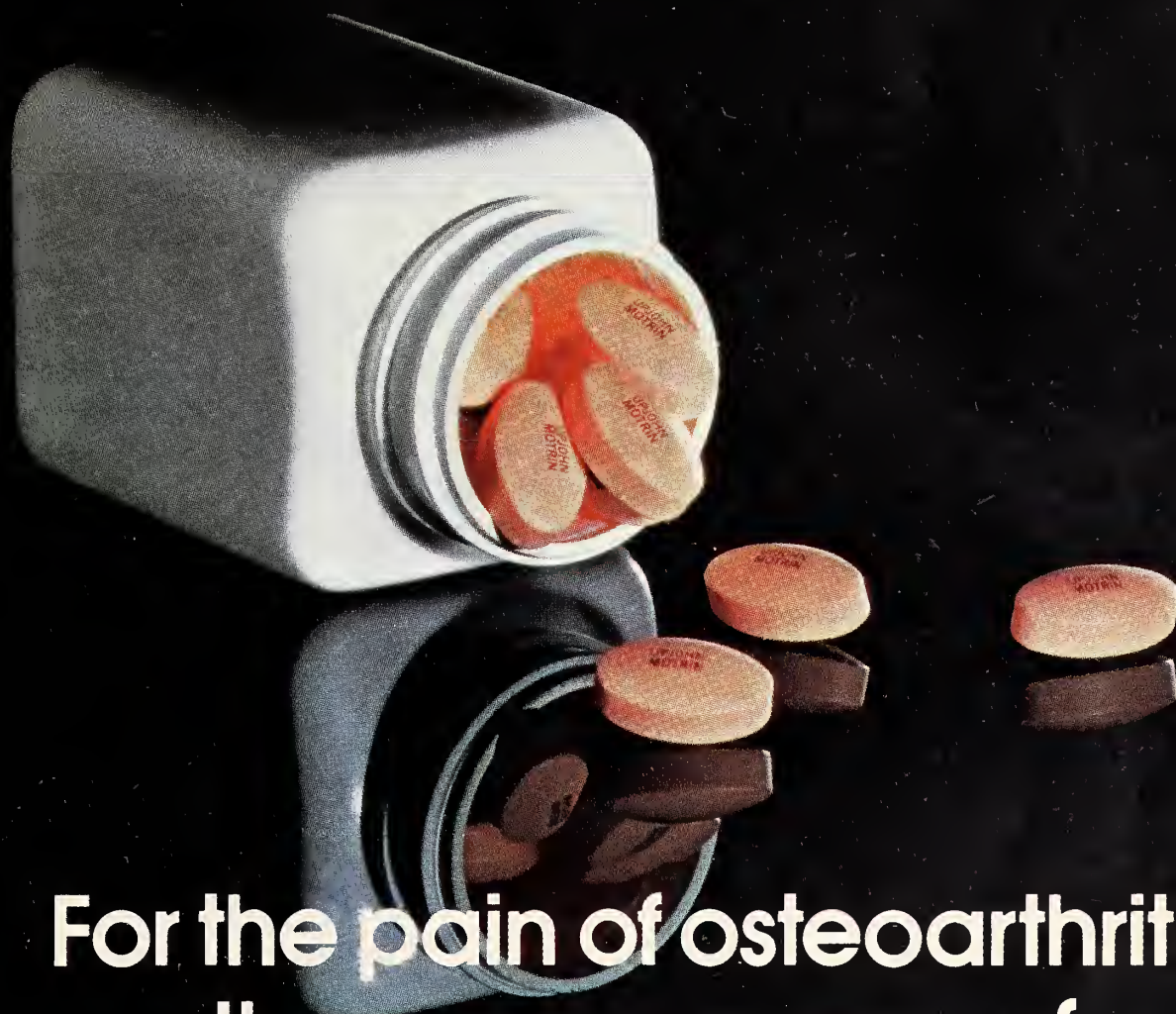
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**Contraindications:** Individuals hypersensitive to it, or with the syndrome of nasal polyps, angioedema, and bronchospastic reactivity to aspirin, iodides, or other non-steroidal anti-inflammatory agents. Anaphylactoid reactions have occurred in such patients.

**Warnings:** Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Ulceration, perforation, and bleeding may end fatally. An association has not been established. *Motrin* should be given under close supervision to patients with a history of upper gastrointestinal tract disease, only after consulting ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be tried. If *Motrin* must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

Chronic studies in rats and monkeys have shown mild renal toxicity characterized by papillary edema and necrosis. Renal papillary necrosis has rarely been shown in humans treated with *Motrin*.

**Precautions:** Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If these develop, discontinue *Motrin* and the patient should have an ophthalmologic examination, including central visual fields and color vision testing. **Fluid retention and edema** have been associated with *Motrin*; use with caution in patients with a history of cardiac decompensation or hypertension. *Motrin* is excreted mainly by the kidneys. In patients with renal impairment, reduced dosage may be necessary. Prospective studies of *Motrin* safety in patients with chronic renal failure have not been done. *Motrin* can inhibit **platelet aggregation** and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy. Patients should report signs or symptoms of **gastrointestinal ulceration** or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema. To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged **corticosteroid therapy** should have therapy tapered slowly when *Motrin* is added. The anti-pyretic, anti-inflammatory activity of *Motrin* may mask inflammation and fever.

**Drug interactions.** *Aspirin*: used concomitantly may decrease *Motrin* blood levels.

*Coumarin*: bleeding has been reported in patients taking *Motrin* and coumarin.

**Pregnancy and nursing mothers:** *Motrin* should not be taken during pregnancy nor by nursing mothers.

### Adverse Reactions

The most frequent type of adverse reaction occurring with *Motrin* is gastrointestinal, of which one or more occurred in 4% to 16% of the patients.

#### **Incidence Greater Than 1% (but less than 3%)—Probable Causal Relationship**

**Gastrointestinal:** Nausea\*, epigastric pain\*, heartburn\*, diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of GI tract (bloating and flatulence); **Central Nervous System:** Dizziness\*, headache, nervousness; **Dermatologic:** Rash\* (including maculopapular type), pruritus; **Special Senses:** Tinnitus; **Metabolic/Endocrine:** Decreased appetite; **Cardiovascular:** Edema, fluid retention (generally responds promptly to drug discontinuation; see PRECAUTIONS).

#### **Incidence Less Than 1%—Probable Causal Relationship\*\***

**Gastrointestinal:** Gastric or duodenal ulcer with bleeding and/or perforation, gastrointestinal hemorrhage, melena, gastritis, hepatitis, jaundice, abnormal liver function tests; **Central Nervous System:** Depression, insomnia, confusion, emotional lability, somnolence, aseptic meningitis with fever and coma; **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme, Stevens-Johnson syndrome, alopecia; **Special Senses:** Hearing loss, amblyopia (blurred and/or diminished vision, scotomata, and/or changes in color vision) (see PRECAUTIONS); **Hematologic:** Neutropenia, agranulocytosis, aplastic anemia, hemolytic anemia (sometimes Coombs' positive), thrombocytopenia with or without purpura, eosinophilia, decreases in hemoglobin and hematocrit; **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure, palpitations; **Allergic:** Syndrome of abdominal pain, fever, chills, nausea and vomiting, anaphylaxis, bronchospasm (see CONTRAINDICATIONS); **Renal:** Acute renal failure in patients with preexisting, significantly impaired renal function, decreased creatinine clearance, polyuria, azotemia, cystitis, hematuria; **Miscellaneous:** Dry eyes and mouth, gingival ulcer, rhinitis.

#### **Incidence Less Than 1%—Causal Relationship Unknown\*\***

**Gastrointestinal:** Pancreatitis; **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities, pseudotumor cerebri; **Dermatologic:** Toxic epidermal necrolysis, photoallergic skin reactions; **Special Senses:** Conjunctivitis, diplopia, optic neuritis; **Hematologic:** Bleeding episodes (e.g., epistaxis, menorrhagia); **Metabolic/Endocrine:** Gynecomastia, hypoglycemic reaction; **Cardiovascular:** Arrhythmia (sinus tachycardia, sinus bradycardia); **Allergic:** Serum sickness, lupus erythematosus syndrome, Henoch-Schönlein vasculitis; **Renal:** Renal papillary necrosis.

\*Reactions occurring in 3% to 9% of patients treated with *Motrin*. (Those reactions occurring in less than 3% of the patients are unmarked.)

\*\*Reactions are classified under "Probable Causal Relationship" (PCR) if there has been one positive rechallenge or if three or more cases occur which might be causally related. Reactions are classified under "Causal Relationship Unknown" if seven or more events have been reported but the criteria for PCR have not been met.

**Overdosage:** In cases of acute overdosage, the stomach should be emptied. The drug is acidic and excreted in the urine, so alkaline diuresis may be beneficial.

**Dosage and Administration:** Do not exceed 2400 mg per day. If gastrointestinal complaints occur, administer with meals or milk.

Rheumatoid arthritis and osteoarthritis, including flares of chronic disease: Suggested dosage is 300, 400, or 600 mg t.i.d. or q.i.d. Mild to moderate pain: 400 mg every 4 to 6 hours as necessary for relief of pain.

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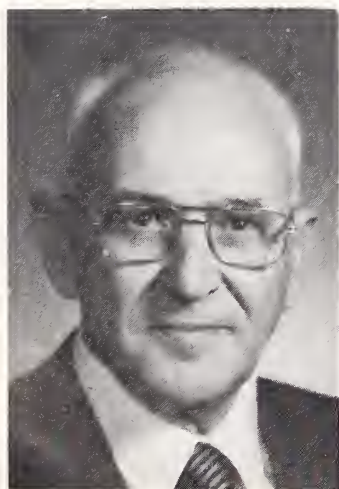


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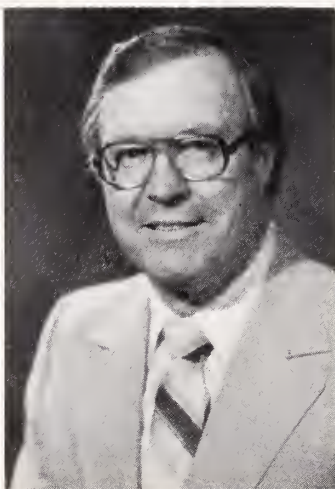
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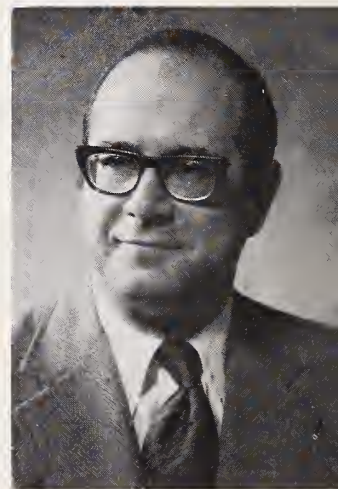
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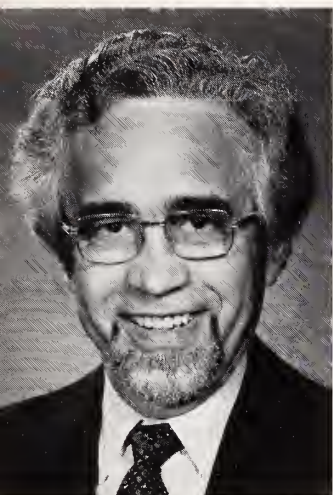
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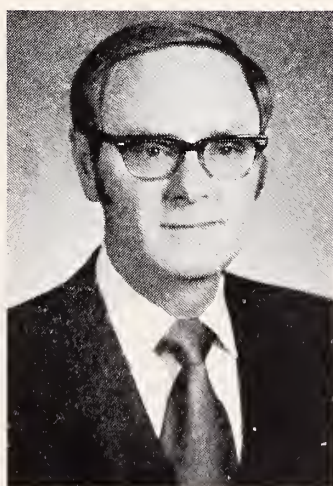
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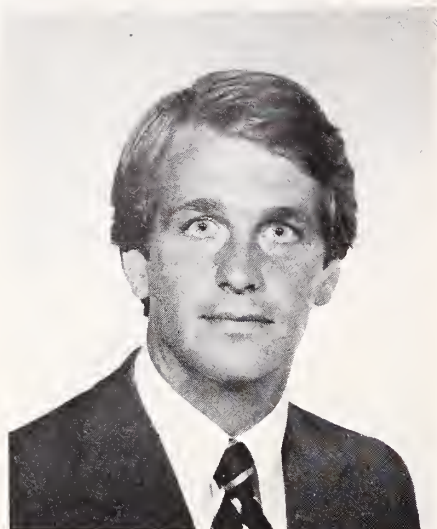
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AT THE AMERICAN MEDICAL ASSOCIATION—  
WE'RE INVOLVED IN MEETING  
THE IMPORTANT CHALLENGES AND  
RESPONSIBILITIES OF THE 80's.  
This is the second in a series of reports on  
major issues facing the medical profession. The purpose is to  
inform physicians on what the AMA is doing, on behalf of  
the profession and the public, to influence decisions that will  
affect health care in the next decade and beyond.

# COPING WITH FEDERAL REGULATION

Federal regulation is the leading growth industry today. It threatens many forms of private enterprise—including your ability to practice good medicine.

Almost every year the total of regulative proposals and decrees has increased. This is reflected in the *Federal Register*, a mere 9,500 pages back in 1950, 61,000 pages in 1978 and 77,000 last year. Projected total this year: 84,000—and health care regulations constitute a major portion of this total.

One reason is that the Federal Government's share of the health care expense nationwide is approaching 25%.

Another reason comes from the late author Michael J. Halberstam, M.D.: "There's a mindset in the regulatory agencies that suggests physicians are incapable of determining what's best for the patient."

A third (and very current) reason is that regulation is seen as a substitute for various health legislation that Congress spurned.

Here's a partial list of disturbing new rules and proposals from different agencies, mainly the Health Care Financing Administration:

- A directive aimed at cutting off federal funds for hospital construction and renovation in "overbedded" areas. This could lead to nationalizing all health planning.
- A possible rule to limit Medicare payments for certain high-technology items, starting with the CT scanner.





- The idea of barring Medicare payment altogether for various new, emerging, or expensive procedures.
- A proposal for uniform Annual Hospital Reports as a tool for setting Medicare reimbursement rates, regardless of local and institutional circumstances.
- A proposal for prior review of hospital admissions and elective surgery, etc., under the Medicare program.
- A regulation allowing access to employee medical records.
- A “uniform implementation” rule for Medicare reimbursement of hospital-based physicians.
- A proposal whereby various medical devices would be made available only to certain medical specialties and facilities.
- A proposal for stringent personnel standards for hospital clinical labs.

The AMA is your best defense against the regulatory invasion of your professionalism and practice. An outstanding example: The Food and Drug Administration had proposed patient package inserts (PPIs) for all prescription drugs. Through conferences and written arguments, the AMA narrowed the scope to 10 drugs on a test basis.

We’ve effectively coped with regulation in a variety of ways, including appeals to the courts. To reform the whole regulatory process, we’ve offered Congress draft legislation aimed at a larger public voice in the process and greater accountability on the part of the regulators.

To maximize our effectiveness, we need YOUR MEMBERSHIP. The larger our membership, now more than 229,000, the bigger our clout. We need clout in the Congress that sends so much “blank check” legislation to the regulatory agencies. We need Congressional clout in getting regulatory reform. We need clout in dealing with the regulators.

We need YOU . . . if we’re to give you all the help that you need.

**For details on how to join, contact your state or county medical society or the AMA Office of Membership Development  
American Medical Association, 535 N. Dearborn, Chicago, IL  
60610, (312) 751-6410.**

This map shows the 18 counties of Oklahoma, each numbered in red. The counties are arranged in a grid-like fashion, with some irregularities due to geographical features. Major cities are marked with 'X'. Shaded areas represent major geographical features like the Flint Hills and the Oklahoma River.

County Number	County Name	Major Cities (marked with X)	Geographical Features
1	Adair	Adair	
2	Alfalfa	Alfalfa	
3	Carter	Carter	
4	Cherokee	Cherokee	
5	Clay	Clay	
6	Delaware	Delaware	
7	Flint Hills	Flint Hills	Flint Hills
8	Cowley	Cowley	
9	Cloud	Cloud	
10	McPherson	McPherson	
11	Sedgwick	Sedgwick	
12	Pratt	Pratt	
13	Central	Central	
14	Pawnee	Pawnee	
15	Iroquois	Iroquois	
16	Northwest	Northwest	
17	Southwest	Southwest	
18	Linn	Linn	



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In the last ten years, SPECTRUM has grown to the largest provider of emergency services management and staffing in the nation (presently over 220 facilities in 33 states). This unparalleled growth is due to the dual commitment of providing quality health care in the emergency setting while assisting the individual physician in attaining both personal and professional goals.

SPECTRUM currently has available for consideration several clinical and directorship positions in the State of Kansas. For information on these opportunities, send credentials in confidence to Mr. William Salmo, Chase Stone Center, Holly Sugar Building, Suite 440, Colorado Springs, CO 80903, or call toll-free 1-800-525-3681 (in Colorado call collect 303-471-4981).

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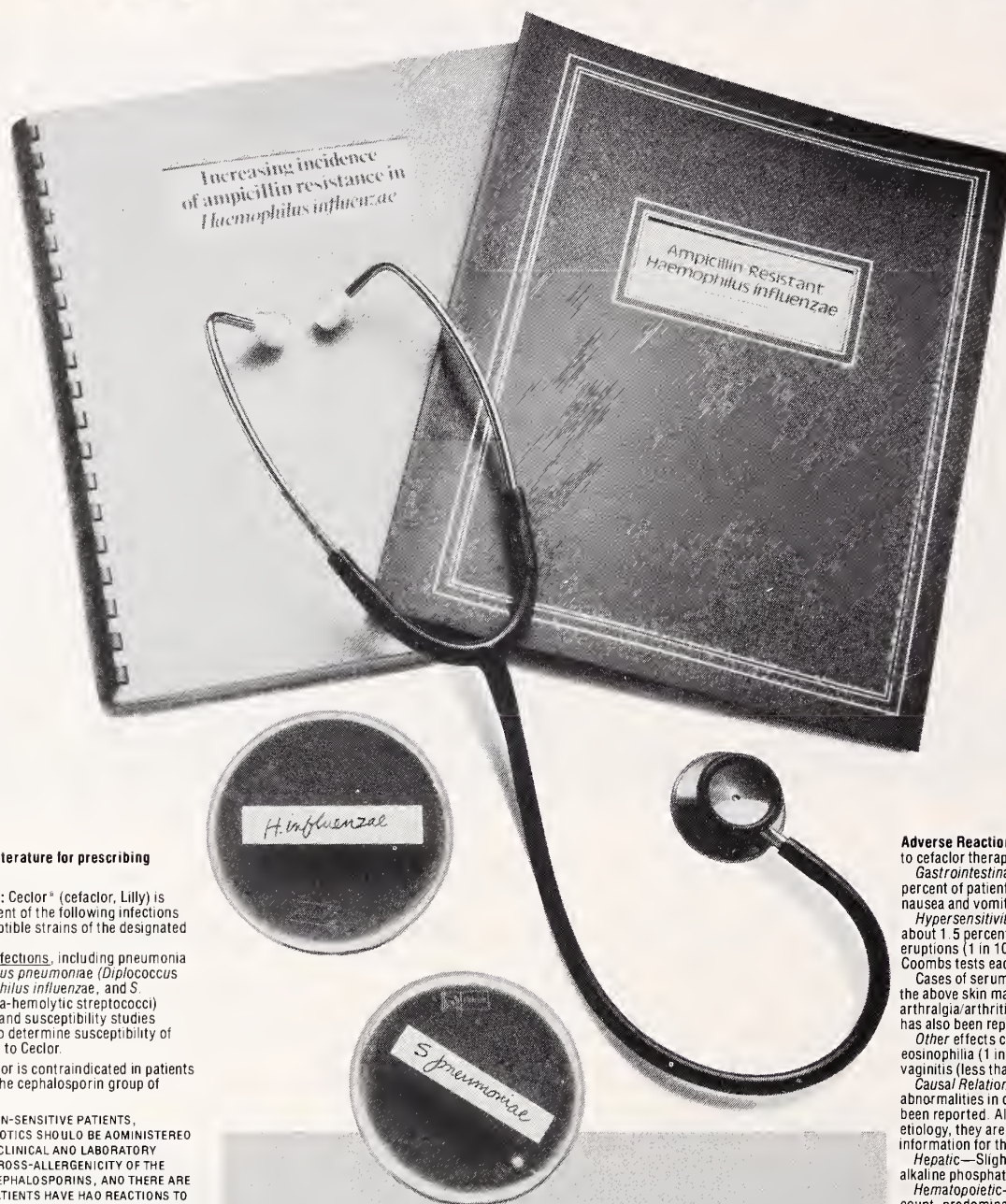
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KANSAS CITY, MO.



# An added complication... in the treatment of bacterial bronchitis\*



**Brief Summary.** Consult the package literature for prescribing information.

**Indications and Usage:** Cefaclor\* (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cefaclor.

**Contraindication:** Cefaclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

**Warnings:** IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS TO BOTH DRUG CLASSES (INCLUDING ANAPHYLAXIS AFTER PARENTERAL USE).

Antibiotics, including Cefaclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

**Precautions:** If an allergic reaction to cefaclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of cefaclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs test may be due to the drug.

Cefaclor should be administered with caution in the presence of markedly impaired renal function. Under such a condition, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Cefaclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinistest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

**Usage in Pregnancy:** Although no teratogenic or antifertility effects were seen in reproduction studies in mice and rats receiving up to 12 times the maximum human dose or in ferrets given three times the maximum human dose, the safety of this drug for use in human pregnancy has not been established. The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus.

**Usage in Infancy:** Safety of this product for use in infants less than one month of age has not been established.

**Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis\*—are sensitive to treatment with Cefaclor.<sup>1-6</sup>**

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Cefaclor.<sup>7</sup>

# Cefaclor®

## cefaclor

Pulvules®, 250 and 500 mg

**Adverse Reactions:** Adverse effects considered related to cefaclor therapy are uncommon and are listed below: Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70) and nausea and vomiting (1 in 90).

**Hypersensitivity reactions** have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100), pruritus, urticaria, and positive Coombs tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions, including the above skin manifestations, fever, and arthralgia/arthritis, have been reported. Anaphylaxis has also been reported.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

**Causal Relationship Uncertain—**Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

**Hepatic—**Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

**Hematopoietic—**Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

**Renal—**Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

[103080R]

\*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.<sup>8</sup>

**Note:** Cefaclor\* (cefaclor) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

#### References

1. Antimicrob. Agents Chemother., 8:91, 1975.
2. Antimicrob. Agents Chemother., 11:470, 1977.
3. Antimicrob. Agents Chemother., 13:584, 1978.
4. Antimicrob. Agents Chemother., 12:490, 1977.
5. Current Chemotherapy (edited by W. Siegenthaler and R. Luthy), II: 880. Washington, D.C.: American Society for Microbiology, 1978.
6. Antimicrob. Agents Chemother., 13:861, 1978.
7. Data on file, Eli Lilly and Company.
8. Principles and Practice of Infectious Diseases (edited by G. L. Mandell, R. G. Douglas, Jr., and J. E. Bennett), p. 487. New York: John Wiley & Sons, 1979.



Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285.

Eli Lilly Industries, Inc. Carolina, Puerto Rico 00630

100061



# Pioneers in Medicine For the Family



## BOOTS PHARMACEUTICALS, INC.

Operating in the U.S. since 1977, Boots is a world-wide leader in pharmaceutical research and manufacture. Boots has directed its efforts toward providing products useful in the practice of family medicine.

Some of our better known products are Lopurin™, Ru-Tuss® and Ru-Vert®. This advertisement highlights four other products particularly useful for the family.

**F-E-P CREME® • SU-TON® • TWIN-K® • TWIN-K-CI™**





For the Majority of  
Steroid-Responsive Dermatoses\*  
Seen in Family Practice

## F-E-P CREME®

(Iodochlorhydroxyquin—Pramoxine HCl—Hydrocortisone)

### The 4 in 1 Corticosteroid Cream

Anti-inflammatory, antifungal, antibacterial actions, and, uniquely, a topical anesthetic for immediate relief of the itching or burning that frequently accompanies skin problems. One size (½ ounce), one strength for ease of prescription.

\*This drug has been evaluated as possibly effective for these indications.  
See prescribing information on last page of this advertisement.

For the Geriatric Patient

## SU-TON®

### Liquid Tonic

A pleasant tasting prescription tonic containing iron, vitamins, minerals, an analeptic and 18% alcohol. Ideal for those who may benefit from vitamin deficiency prevention. Just one tablespoon before each meal.

Each 45 ml (3 tablespoonfuls) contains:

Pentylentetrazol.	30 mg
Niacin.	50 mg
Vitamin B-1.	10 mg
Vitamin B-2.	5 mg
Vitamin B-6.	1 mg
Vitamin B-12.	3 mcg
Choline.	100 mg
Inositol.	50 mg
Manganese (as Manganese Sulfate).	1 mg
Magnesium (as Magnesium Sulfate).	2 mg
Zinc (as Zinc Sulfate).	1 mg
Iron (as Ferric Pyrophosphate, Soluble)	22 mg
Alcohol.	18%

See prescribing information on last page of this advertisement.





## For Potassium Supplementation Improved Compliance...

# TWIN-K<sup>®</sup>

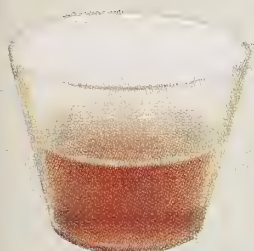
Each 15 ml supplies 20 mEq of potassium ions as a combination of potassium gluconate and potassium citrate in a sorbitol and saccharin solution.

The good tasting potassium supplement

- Designed for prophylactic and therapeutic use with diuretics and adrenocorticoids.
- Pleasant taste and convenient dosage aid patient compliance.

The organic salt of potassium can be given as a liquid without producing significant gastric symptoms and without an untoward effect on the mucosa of the small intestine.<sup>1</sup>

1. Beeson-McDermott, Textbook of Medicine, 15th Ed. 1979, W.B. Saunders Co., Philadelphia, page 1959.



## In Cases with Chloride Deficiency...

# TWIN-K-Cl<sup>™</sup>

Each 15 ml supplies 15 mEq of potassium ions and 4 mEq of chloride ions as a combination of potassium gluconate, potassium citrate, and ammonium chloride in a sorbitol and saccharin solution.

The good tasting potassium supplement with chloride

- In hypokalemic hypochloremic alkalosis, chloride ions are required. Twin-K-Cl is specially formulated to be a good tasting chloride containing potassium supplement.
- Contains no potassium chloride. Twin-K-Cl is a carefully balanced combination of organic potassium salts plus ammonium chloride.
- In hypochloremic patients, potassium should be provided as the chloride salt, or chloride ion must be made available in some other form, such as ammonium chloride or sodium chloride.<sup>1</sup>

See prescribing information on last page of this advertisement.





## F-E-P CREME

### DESCRIPTION

F-E-P Creme is a topical water soluble anti-inflammatory, anesthetic preparation intended for treatment of various inflammatory skin disorders. The drug contains the following active ingredients:

Iodochlorhydroxyquin	3.0%
Pramoxine Hydrochloride	0.5%
Hydrocortisone	1.0%

### INDICATIONS AND USAGE

Based on a review of this drug by the National Academy of Sciences-National Research Council and/or other information, FDA has classified the indications as follows: "Possibly" effective: Contact or atopic dermatitis; impetiginized eczema; nummular eczema; infantile eczema; endogenous chronic infectious dermatitis; stasis dermatitis; pyoderma, nuchal eczema and chronic eczematoid otitis externa, acne urticata; localized or disseminated neurodermatitis; lichen simplex chronicus; anogenital pruritus (vulvae, scroti, ani); folliculitis; bacterial dermatoses; mycotic dermatoses such as tinea (capitis, cruris corporis, pedis); moniliasis; intertrigo. Final classification of the less-than-effective indications requires further investigation.

Pramoxine Hydrochloride promptly relieves pain and itch. This compound may be used safely on the skin of those patients sensitive to the "caine" type local anesthetics.

### CONTRAINDICATIONS

Hypersensitivity to F-E-P Creme, or any of its ingredients or related compounds; lesions of the eye; tuberculosis of the skin; most viral skin lesions (including herpes simplex, vaccinia and varicella).

### WARNINGS

This product is not for ophthalmic use.

In the presence of systemic infections, appropriate antibiotics should be used.

### USE IN PREGNANCY

Topical steroids have not been reported to have an adverse effect on pregnancy. However, fetal abnormalities have been produced in pregnant laboratory animals that have been exposed to large doses of topical corticosteroids. Drugs of this class should not be used extensively during pregnancy.

### PRECAUTIONS

F-E-P Creme may be irritating to the skin in some patients. If irritation occurs discontinue therapy. Staining of clothes or hair may also occur with use of this preparation. Although systemic toxicity has not been reported with this drug, adrenal pituitary suppression is possible, especially when the drug is used extensively or kept under an occlusive dressing for a prolonged period.

Iodochlorhydroxyquin can be absorbed through the skin and interfere with thyroid function tests. Therapy with this preparation should stop at least a month before performance of these tests. The ferric chloride test for phenylketonuria (PKU) can be positive if F-E-P Creme is on the diaper or in the urine.

Prolonged use of this drug may result in an overgrowth of non-susceptible organisms requiring appropriate therapy.

### ADVERSE REACTIONS

Skin rash or hypersensitivity may occur following topical application.

The following local adverse reactions have been reported with topical corticosteroids, especially under occlusive dressings: burning, itching, irritation, dryness, folliculitis, hypertrichosis, acneiform eruptions, hypopigmentation, perioral dermatitis, allergic contact dermatitis, maceration of the skin, secondary infection, skin atrophy, striae, miliaria. Discontinue therapy if untoward reactions occur.

### DOSAGE AND ADMINISTRATION

Apply a thin layer of the drug to affected parts 3-4 times daily.

### Note:

1. F-E-P Creme is distributed with 3.0% iodochlorhydroxyquin for use when antibacterial/antifungal activity is desired.
2. F-E-P Creme (Plain) is the regular formulation, but without iodochlorhydroxyquin.

Both of these preparations contain pramoxine hydrochloride, which has topical anesthetic properties. Pramoxine is not chemically related to benzoic acid or amide type topical anesthetics. Patients can tolerate pramoxine although they may be sensitive to other "caine" type of topical or local anesthetics.

### HOW SUPPLIED

F-E-P Creme 1/2 ounce (15 gm) tubes NDC 0524-0026-51  
F-E-P Creme Plain 1/2 ounce (15 gm) tubes NDC 0524-0025-51  
Federal law prohibits dispensing without a prescription.  
July 1980

## SU-TON®

### DESCRIPTION

Forty-five milliliters of SU-TON contain the following ingredients:

Pentylenetetrazol	30 mg
Niacin	50 mg
Vitamin B-1	10 mg
Vitamin B-2	5 mg
Vitamin B-6	1 mg
Vitamin B-12	3 mcg
Choline	100 mg
Inositol	50 mg
Manganese (as Manganese Sulfate)	1 mg
Magnesium (as Magnesium Sulfate)	2 mg
Zinc (as Zinc Sulfate)	1 mg
Iron (as Ferric Pyrophosphate, Soluble)	22 mg
Alcohol	18%

### INDICATIONS AND USAGE

SU-TON contains pentylenetetrazol which may be helpful in the older patient as an analeptic agent when mental confusion and memory defects are present. SU-TON also contains vitamins, trace minerals, and iron, for those patients who may benefit by preventing the development of a deficiency.

### CONTRAINDICATIONS

Epilepsy, convulsive disorders or known history of sensitivity to any of the listed active ingredients.

### WARNINGS

The safety of this preparation during pregnancy and lactation has not been established. Use of this drug requires that the physician evaluate the potential benefits of the drug against any possible hazard to the mother and child.

### PRECAUTIONS

Although there are no absolute contraindications to pentylenetetrazol, it should be used with caution in epileptic patients or those known to have a low convulsive threshold or a focal brain lesion. Caution should be exercised when treating patients with high doses of SU-TON who have heart disease. While pentylenetetrazol does not act directly on the myocardium, the results from central vagal stimulation could cause bradycardia.

### ADVERSE REACTIONS

Pentylenetetrazol in high doses may produce toxic symptoms typical of central nervous system stimulants, which act on the higher motor centers and the spinal cord. Convulsions resulting from this drug are spontaneous and are not induced by external stimuli. They usually last for several minutes and are followed by profound depression and respiratory paralysis. Death has been reported from the ingestion of 10 grams of pentylenetetrazol.

### DRUG ABUSE

Drug dependence has not been reported with SU-TON.

### OVERDOSAGE

Signs and symptoms of acute overdose may be due principally from overstimulation of the central nervous system and from excessive vasodilation with resulting autonomic nervous system imbalance. The symptoms may include the following: vomiting, agitation, tremors, hyperreflexia, sweating, confusion, hallucinations, headache, hyperpyrexia, tachycardia. Treatment consists of appropriate supportive measures. If signs and symptoms are not too severe and the patient is conscious, gastric evacuation may be accomplished by induction of emesis or gastric lavage.

Intensive care must be provided to maintain adequate circulation and respiratory exchange.

### DOSAGE AND ADMINISTRATION

One tablespoonful (15 ml) 3 times a day 20-30 minutes before meals. This drug is not for use in children under 12 years of age.

### HOW SUPPLIED

Bottles of 473 ml (16 fl oz) NDC 0524-0015-16  
Federal law prohibits dispensing without prescription.  
February 1980

## TWIN-K®

### DESCRIPTION

Each 15 milliliter (one tablespoonful) supplies 20 mEq of potassium ions as a combination of potassium gluconate and potassium citrate in a sorbitol and saccharin solution.

### INDICATIONS AND USAGE

For use as oral potassium therapy in the prevention or treatment of hypokalemia which may occur secondary to diuretic or corticosteroid administration. It may be used in the treatment of cardiac arrhythmias due to digitalis intoxication.

### CONTRAINDICATIONS

Severe renal impairment with oliguria or azotemia, untreated Addison's disease, adynamia episodica hereditaria, acute dehydration, heat cramps and hyperkalemia from any cause. This product should not be used in patients receiving aldosterone antagonists or triamterene.

### WARNINGS

TWIN-K (potassium gluconate and potassium citrate) is a palatable form of oral potassium replacement. It appears that little if any potassium gluconate-citrate penetrates as far as the jejunum or ileum where enteric coated potassium chloride lesions have been noted. Excessive, undiluted doses of TWIN-K may cause a saline laxative effect.

To minimize gastrointestinal irritation, it is recommended that TWIN-K be taken with meals or diluted with water or fruit juice. A tablespoonful (15 ml) in 8 ounces of water is approximately isotonic. More than a single tablespoonful should not be taken without prior dilution.

### PRECAUTIONS

Potassium is a major intracellular cation which plays a significant role in body physiology. The serum level of potassium is normally 3.8-5.0 mEq/liter. While the serum or plasma level is a poor indicator of total body stores, a plasma or serum level below 3.5 mEq/liter is considered to be indicative of hypokalemia.

The most common cause of hypokalemia is excessive loss of potassium in the urine. However, hypokalemia can also occur with vomiting, gastric drainage and diarrhea.

Usually a potassium deficiency can be corrected by oral administration of potassium supplements. With normal kidney function, it is difficult to produce potassium intoxication by oral administration. However, potassium supplements must be administered with caution since, usually, the exact amount of the deficiency is not accurately known. Checks on the patient's clinical status and periodic EKG and/or serum potassium levels should be made. High serum potassium levels may cause death by cardiac depression, arrhythmias or arrest.

In patients with hypokalemia who also have alkalosis and a chloride deficiency (hypokalemic hypochloremic alkalosis), there will be a requirement for chloride ions. TWIN-K is not recommended for use in these patients.

### ADVERSE REACTIONS

Symptoms of potassium intoxication include paresthesias of the extremities, flaccid paralysis, listlessness, mental confusion, weakness and heaviness of the legs, fall in blood pressure, cardiac arrhythmias and heart block. Hyperkalemia may exhibit the following electrocardiographic abnormalities: disappearance of the P wave, widening and slurring of the QRS complex, changes of the ST segment and tall peaked T waves.

TWIN-K taken on an empty stomach in undiluted doses larger than 30 ml can produce gastric irritation with nausea, vomiting, diarrhea, and abdominal discomfort.

### OVERDOSAGE

The administration of oral potassium supplements to persons with normal kidney function rarely causes serious hyperkalemia. However, if the renal excretory function is impaired, potentially fatal hyperkalemia can result. It is important to note that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration with or without EKG changes. Treatment measures include:

1. Elimination of potassium containing drugs or foods.
2. Intravenous administration of 300 to 500 mEq/hr of a 10% dextrose solution containing 10-20 units of crystalline insulin per 1000 milliliters.
3. Correction of acidosis.
4. Use of exchange resins or peritoneal dialysis.

In treating hyperkalemia, it should be noted that patients stabilized on digitalis can develop digitalis toxicity when the serum potassium concentration is changed too rapidly.

### DOSAGE AND ADMINISTRATION

The usual adult dosage is one tablespoonful (15 ml) in 6-8 fluid ounces of water or fruit juice, two to four times a day. This will supply 40 to 80 mEq of potassium ions. The usual preventative dose of potassium is 20 mEq per day while therapeutic doses range from 30 mEq to 100 mEq per day. Because of the potential for gastrointestinal irritation, undiluted large single doses (30 ml or more) of TWIN-K are to be avoided.

Deviations from this schedule may be indicated, since no average total daily dose can be defined, but must be governed by close observation for clinical effects.

### HOW SUPPLIED

Bottles of 1 pint (16 fl oz)

NDC 0524-0021-16

### CAUTION

Federal law prohibits dispensing without prescription.  
July 1980

## TWIN-K-CI™

### DESCRIPTION

Each 15 ml (one tablespoonful) supplies 15 mEq of potassium ions and 4 mEq of chloride ions as a combination of potassium gluconate, potassium citrate, and ammonium chloride, in a sorbitol and saccharin solution.

### INDICATIONS

For use as oral potassium therapy in the prevention or treatment of hypokalemia which may occur secondary to diuretic or corticosteroid administration. It may be used in the treatment of cardiac arrhythmias due to digitalis intoxication.

Potassium and chloride are usually the salts of choice in the treatment of hypokalemia since chloride and potassium deficiencies are likely to be associated with each other.

### CONTRAINDICATIONS

Severe renal impairment with oliguria or azotemia, untreated Addison's disease, adynamia episodica hereditaria, acute dehydration, heat cramps and hyperkalemia from any cause. This product should not be used in patients receiving aldosterone antagonists or triamterene.

### WARNINGS

TWIN-K-CI is a palatable form of oral potassium replacement. Excessive, undiluted doses of TWIN-K-CI may cause a saline laxative effect.

To minimize gastrointestinal irritation, it is recommended that TWIN-K-CI be taken with meals or diluted with water or fruit juice. A tablespoonful (15 ml) in 8 ounces of water is approximately isotonic. More than a single tablespoonful should not be taken without prior dilution.

### PRECAUTIONS

Potassium is a major intracellular cation which plays a significant role in body physiology. The serum level of potassium is normally 3.8-5.0 mEq/liter. While the serum or plasma level is a poor indicator of total body stores, a plasma or serum level below 3.5 mEq/liter is considered to be indicative of hypokalemia.

The most common cause of hypokalemia is excessive loss of potassium in the urine. However, hypokalemia can also occur with vomiting, gastric drainage and diarrhea.

Usually a potassium deficiency can be corrected by oral administration of potassium supplements. With normal kidney function, it is difficult to produce potassium intoxication by oral administration. However, potassium supplements must be administered with caution since, usually, the exact amount of the deficiency is not accurately known. Checks on the patient's clinical status and periodic EKG and/or serum potassium levels should be made. High serum potassium levels may cause death by cardiac depression, arrhythmias or arrest.

In patients with hypokalemia who also have alkalosis and a chloride deficiency (hypokalemic hypochloremic alkalosis), there will be a requirement for chloride ions. TWIN-K-CI is recommended for use in these patients.

### ADVERSE REACTIONS

Symptoms of potassium intoxication include paresthesias of the extremities, flaccid paralysis, listlessness, mental confusion, weakness and heaviness of the legs, fall in blood pressure, cardiac arrhythmias and heart block. Hyperkalemia may exhibit the following electrocardiographic abnormalities: disappearance of the P wave, widening and slurring of the QRS complex, changes of the ST segment and tall peaked T waves.

TWIN-K-CI taken on an empty stomach in undiluted doses larger than 30 ml can produce gastric irritation with nausea, vomiting, diarrhea, and abdominal discomfort.

### OVERDOSAGE

The administration of oral potassium supplements to persons with normal kidney function rarely causes serious hyperkalemia. However, if the renal excretory function is impaired, potentially fatal hyperkalemia can result. It is important to note that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration with or without EKG changes.

Treatment measures include:

1. Elimination of potassium containing drugs or foods.
2. Intravenous administration of 300 to 500 mEq/hr of a 10% dextrose solution containing 10-20 units of crystalline insulin per 1000 milliliters.
3. Correction of acidosis.
4. Use of exchange resins or peritoneal dialysis.

In treating hyperkalemia, it should be noted that patients stabilized on digitalis can develop digitalis toxicity when the serum potassium concentration is changed too rapidly.

### DOSAGE AND ADMINISTRATION

The usual adult dosage is one tablespoonful (15 ml) in 6-8 fluid ounces of water or fruit juice, two to four times a day. This will supply 30 to 60 mEq of potassium ions and 8 to 16 mEq of chloride ions. The usual preventative dose of potassium is 20 mEq per day while therapeutic doses range from 30 mEq to 100 mEq per day. Because of the potential for gastrointestinal irritation, undiluted large single doses (30 ml or more) of TWIN-K-CI are to be avoided.

Deviations from this schedule may be indicated, since no average total daily dose can be defined, but must be governed by close observation for clinical effects.

HOW SUPPLIED Bottles of 1 pint (16 fl oz)

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# Principles of MEDICAL ETHICS

**Preamble:**

The medical profession has long subscribed to a body of ethical statements developed primarily for the benefit of the patient. As a member of this profession, a physician must recognize responsibility not only to patients, but also to society, to other health professionals, and to self. The following Principles adopted by the American Medical Association are not laws, but standards of conduct which define the essentials of honorable behavior for the physician.

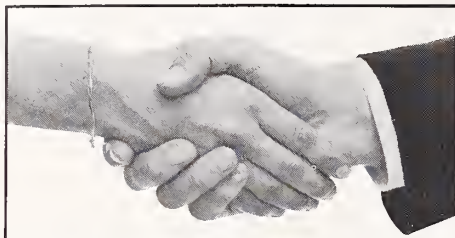
- I. A physician shall be dedicated to providing competent medical service with compassion and respect for human dignity.
- II. A physician shall deal honestly with patients and colleagues, and strive to expose those physicians deficient in character or competence, or who engage in fraud or deception.
- III. A physician shall respect the law and also recognize a responsibility to seek changes in those requirements which are contrary to the best interests of the patient.
- IV. A physician shall respect the rights of patients, of colleagues, and of other health professionals, and shall safeguard patient confidences within the constraints of the law.
- V. A physician shall continue to study, apply and advance scientific knowledge, make relevant information available to patients, colleagues, and the public, obtain consultation, and use the talents of other health professionals when indicated.
- VI. A physician shall, in the provision of appropriate patient care, except in emergencies, be free to choose whom to serve, with whom to associate, and the environment in which to provide medical services.
- VII. A physician shall recognize a responsibility to participate in activities contributing to an improved community.

**Adopted by the A.M.A. House of Delegates  
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## **RESOURCE FOR PHYSICIANS IN TROUBLE**

The Kansas Medical Society Impaired Physicians Program is now operational. If you desire more information concerning this program, if you know an impaired colleague who needs help, or if you are concerned about yourself or your spouse, please contact one of the Committee members nearest you, as listed below, or the KMS Executive Office. All such contacts will be held in strictest confidence and the caller need not reveal his name, if he/she so desires.

Alcoholism, other drug abuse, and medical/neurological/psychological problems are potentially treatable conditions. All impaired physicians should be encouraged to seek help at the earliest possible time in order to retain or regain full effectiveness to practice medicine. Please contact one of the following:

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Secretary-Treasurer — William G. Eckert, M.D., Wichita

# Hospitals — State Institutions — Poison Control Centers — Home Health Agencies Genetic Counseling Centers

## GENERAL HOSPITALS IN KANSAS

- Abilene** — Memorial, 511 N.E. 10th Street 67410, Leon J. Boor, Adm. — 913/263-2100
- Anthony** — Anthony Hospital & Clinic, 1101 E. Spring 67003, Dale Weiberg, Adm. — 316/842-5111
- Arkansas City** — Arkansas City Memorial, 216 West Birch 67005, Stephen Mason, Adm. — 316/442-2500
- Ashland** — Ashland District, 709 Oak 67831, Hazel Thomas, Adm. — 316/635-2241
- Atchison** — Atchison, 1301 N. Second 66002, James A. Asher, Adm. — 913/367-2131
- Attica** — Attica District, P.O. Box 268 67009, Ron McCoy, Adm. — 316/254-7253
- Atwood** — Rawlins County, P.O. Box 47 67730, Dean Zerr, R.N., Adm. — 913/626-3211
- Augusta** — Augusta Medical Complex, P.O. Box 430 67010, Larry Wilkerson, Adm. — 316/775-5421
- Baxter Springs** — Baxter Memorial, P.O. Box 151 66713, James L. Kirkpatrick, Adm. — 316/856-2314
- Belleville** — Republic County, 66935, Bonnie Elliott, R.N., Adm. — 913/527-2255
- Beloit** — Mitchell County Community, 400 West 8th 67420, Doris Haworth, Adm. — 913/738-2266
- Bucklin** — Bucklin District, P.O. Box 38 67834, Larry Landers, Adm. — 316/826-3211
- Burlington** — Coffey County, Fourth & Garrettson 66839, Dennis Owens, Adm. — 316/364-2121
- Caldwell** — Sumner County Dist. #1, P.O. Box 111 67022, Eugene M. Horak, Adm. — 316/845-6492
- Caney** — Caney Municipal, P.O. Box 325 67333, Susan Barrett, Adm. — 316/879-2182
- Cedar Vale** — Cedar Vale Regional, P.O. Box 398 67024, John F. Meyers, Adm. — 316/758-2266
- Chanute** — Neosho Memorial, 629 S. Plummer 66720, Murray L. Brown, Adm. — 316/431-4000
- Clay Center** — Clay County, 617 Liberty 67432, Jon J. Robinson, Adm. — 913/632-2144
- Coffeyville** — Coffeyville Memorial, P.O. Box 856 67337, George A. Smith, Adm. — 316/251-1200
- Colby** — . Thomas County, P.O. Box 667 67701, Brian Windholz, Adm. — 913/462-3335
- Coldwater** — Comanche County, Second & Frisco 67029, Lorraine Unruh, Adm. — 316/582-2144
- Columbus** — Maude Norton Memorial City, 220 N. Pennsylvania 66725, Imogene Sandella, Adm. — 316/429-2545
- Concordia** — St. Joseph, 1100 Highland Drive 66901, Sister Elizabeth Stover, Pres. — 913/243-1234
- Council Grove** — Morris County, 600 N. Washington 66846, Ron Thompson, Adm. — 316/767-5151
- Dighton** — Lane County, P.O. Box 728 67839, Linda Linden, Adm. — 316/397-5321
- Dodge City** — Dodge City Regional, P.O. Box 1478 67801, Raymond A. Rouleau, Jr., Adm. — 316/225-9050
- El Dorado** — Susan B. Allen Memorial, P.O. Box 251 67042, Walter E. Shain, Adm. — 316/321-3300
- Elkhart** — Morton County, P.O. Box 937 67950, Dale L. Martin, Adm. — 316/697-2141
- Ellinwood** — Ellinwood District, 605 North Main 67526, Marge Ney, R.N., Adm. — 316/564-2549
- Ellsworth** — Ellsworth County Veterans' Memorial, P.O. Box F 67439, Hugh Adams, Adm. — 913/472-3111
- Emporia** — Newman Memorial County, 12th & Chestnut 66801, Roger B. Samuelson, Adm. — 316/343-6800
- Emporia** — St. Mary's, Fifteenth & State 66801, Donald Henry, Adm. — 316/342-2450
- Eureka** — Greenwood County, 100 East 16th 67045, Phyllis Koenig, Supt. — 316/583-7451
- Fort Scott** — Mercy, 821 Burke Street 66701, Sister Mary Trinity, Pres. — 316/223-2200
- Fredonia** — St. Margaret's Mercy, P.O. Box 519 66736, Sister Mary Faith Matney, Adm. — 316/378-2121
- Garden City** — St. Catherine, 608 N. Fifth Street 67846, Sister Anita Schugart, Pres. — 316/275-6111
- Gardner** — Gardner Community Medical Center, 427 W. Main 66030, Henry R. Steinhaus, Adm. — 913/884-8711



- Garnett** — Anderson County, P.O. Box 309 66032, Randall Hempling, Adm. — 913/448-3131
- Girard** — Hospital District #1, RR #2, Box 5A, 66743, Barbara Lohmeyer, Adm. — 316/724-8291
- Goessel** — Mennonite Bethesda, 412 E. Main 67053, Ralph Garrison, Adm. — 316/367-2291
- Goodland** — Northwest Kansas Medical Center, P.O. Box 629 67735, Bill D. Wilson, Adm. — 913/899-3625
- Great Bend** — Central Kansas Medical Center, 3515 Broadway 67530, Sister Philomena Hrencher, Pres. — 316/792-2511
- Greensburg** — Kiowa County Memorial, P.O. Box 616 67054, Jerry Unruh, Adm. — 316/723-3341
- Halstead** — Halstead, 328 Poplar 67056, Sister Mary de Paul, Adm. — 316/835-2651
- Hanover** — Washington County District #1, P.O. Box 38 66945, Roger D. Warren, M.D., Adm. — 913/337-2214
- Harper** — Harper County District #5, 12th & Maple 67058, Marshall P. Ray, Adm. — 316/896-7324
- Hays** — Hadley Regional Medical Center, 201 East Seventh Street 67601, Donald M. Stewart, Adm. — 913/628-8251
- Hays** — St. Anthony, P.O. Box 660 67601, Oren M. Windholz, Pres. — 913/625-7301
- Herington** — Herington Municipal, 100 East Helen 67449, Curt Thomas, Adm. — 913/258-2207
- Hiawatha** — Hiawatha Community, 300 Utah 66434, Gerald E. Alkire, Adm. — 913/742-2131
- Hill City** — Graham County, 304 Prout 67642, Larry G. Patterson, Adm. — 913/674-2121
- Hillsboro** — Salem, 701 South Main 67063, John Wiebe, Adm. — 316/947-3114
- Hoisington** — Hoisington Lutheran, 250 West Ninth 67544, Angeline C. Deutsch, Adm. — 316/653-2114
- Holton** — Holton City, 418 West Fifth 66436, Roger S. Lewis, Adm. — 913/364-2116
- Horton** — Horton Community, P.O. Box 191 66439, David Bauman, Adm. — 913/486-2642
- Hoxie** — Sheridan County, 826 Eighteenth Street 67740, Elizabeth Charlton, R.N., Adm. — 913/675-3281
- Hugoton** — Stevens County, P.O. Box 10 67951, James Mackay, Jr., Adm. — 316/544-8511
- Hutchinson** — Hutchinson Hospital Corp., 1701 East 23rd Avenue 67501, H. Gerald Smith, Exec. Vice Pres. — 316/663-6811
- Independence** — Mercy, P.O. Box 388 67301, Sister Mary Faith Matney, Adm. — 316/331-2200
- Iola** — Allen County, 101 South First 66749, Ted Mohr, Exec. Dir. — 316/365-3131
- Jetmore** — Hodgeman County Health Center, 67854 — 316/357-8361
- Johnson** — Stanton County, P.O. Box E 67855, Mrs. Evelyn Walters, Adm. — 316/492-6250
- Junction City** — Geary Community, P.O. Box 490 66441, Gerald Geringer, Adm. — 913/238-4131
- Kansas City** — Bethany Medical Center, 51 North 12th 66102, John L. Millard, Pres. — 913/281-8400
- Kansas City** — Prov.-St. Margaret Health Center, P.O. Box 12430 66112, Sister Kathleen, Exec. Dir. — 913/334-4000
- Kansas City** — University of Kansas Medical Center, 39th & Rainbow Blvd. 66103, Dr. Masahiro Chiga, Med. Dir. — 913/588-5000
- Kingman** — Kingman Community, P.O. Box 376 67068, Phillip L. Unruh, Adm. — 316/532-3147
- Kinsley** — Edwards County, P.O. Box 99 67547, Robert L. Mullen, Adm. — 316/659-3621
- Kiowa** — Kiowa District, 810 Drumm Street 67070, Buck McKinney, Adm. — 316/825-4130
- La Crosse** — Rush County Memorial, Eighth & Locust 67548, Carol Larkin, Adm. — 913/222-2545
- Lakin** — Kearny County, 306 Kansas 67860, Jerrell J. Horton, Adm. — 316/355-7111
- Larned** — St. Joseph Memorial, 923 Carroll Street 67550, Sister Teri Wall, Pres. — 316/285-3161
- Lawrence** — Lawrence Memorial, 325 Maine Street 66044, Robert B. Ohlen, Chief Executive Officer — 913/843-3680
- Lawrence** — Watkins Memorial, University of Kansas 66045, Martin Wollmann, M.D., Dir. — 913/843-4455
- Leavenworth** — Cushing Memorial, 623 Marshall 66048, Charles L. Rogers, Adm. — 913/682-8000
- Leavenworth** — Saint John, 3500 South 4th 66048, Sister Mary Concetta Mock, Acting Adm. — 913/682-3721
- Leoti** — Wichita County, P.O. Box 968 67861, Kim Berning, Adm. — 316/375-2233
- Liberal** — Southwest Medical Center, P.O. Box 1340 67901, William Griffith, Adm. — 316/624-1651
- Lincoln** — Lincoln County, 624 North Second 67455, Larry Baecht, Adm. — 913/524-4403
- Lindsborg** — Lindsborg Community, 605 West Lincoln 67456, Marie Muller, R.N., Adm. — 913/227-3308
- Lyons** — Rice County District #1, 619 South Clark 67554, Tom Talley, Adm. — 316/257-2348

**Manhattan** — Lafene Student Health Center, Kansas State University 66506, Robert C. Tout, Adm. — 913/532-6544

**Manhattan** — Memorial, P.O. Box 1208 66502, Thomas O. Faulkner, Exec. Dir. — 913/776-3300

**Manhattan** — Saint Mary, P.O. Box 1047 66502, Dan P. Broyles, Adm. — 913/776-3322

**Mankato** — Jewell County, P.O. Box 327 66956, Doris Hancock, Adm. — 913/378-3137

**Marion** — St. Luke, 1012 East Melvin 66861, Ronald Cork, Adm. — 316/382-2177

**Marysville** — Community Memorial, 708 N. 18th Street 66508, Harley B. Appel, Adm. — 913/562-2311

**McPherson** — Memorial, P.O. Box 1166 67460, Ronald G. Schaumburg, Adm. — 316/241-2250

**Meade** — Meade District, 510 East Carthage 67864, Michael Thomas, Adm. — 316/873-2141

**Medicine Lodge** — Medicine Lodge Memorial, 710 North Walnut 67104, Darryl D. Serpan, Adm. — 316/886-3771

**Minneapolis** — Ottawa County, P.O. Box 209 67467, Doris Bogart, R.N., Adm. — 913/392-2122

**Minneola** — Minneola District, 212 Main 67865, Lou Esplund, Adm. — 316/885-4264

**Moundridge** — Mercy, 218 East Pack 67107, Doyle K. Johnson, Adm. — 316/345-6391

**Neodesha** — Wilson County, P.O. Box 149 66757, Dewey Smith, Adm. — 316/325-2611

**Ness City** — Ness County District #2, 312 Custer 67560, Dee Eibert, Adm. — 913/798-2291

**Newton** — Axtell Christian, 209 East Broadway 67114, W. Charles Waters, Adm. — 316/283-5200

**Newton** — Bethel Deaconess, 411 Southeast Second 67114, Marvin H. Ewert, Adm. — 316/283-2700

**Newton** — Prairie View Mental Health Center, P.O. Box 467 67114, Larry W. Nikkel, Adm. — 316/283-2400

**Norton** — Norton County, P.O. Box 250 67654, Richard Miller, Adm. — 913/877-3351

**Norton** — Valley Hope Alcoholism Treatment Center, P.O. Box 410 67654, Dennis R. Gilhousen, Adm. — 913/877-5111

**Oakley** — Logan County, 211 Cherry Street 67748, Rodney Bates, Adm. — 913/672-3211

**Oberlin** — Decatur County, 810 West Columbia 67749, Terry Hoffart, Adm. — 913/475-2208

**Olathe** — Mid-Continent Psychiatric, 122 North Cooper 66061, Jack Rash, Adm. — 913/782-4282

**Olathe** — Olathe Community, 300 S. Rogers Road 66061, Frank Devocelle, Adm. — 913/782-1451

**Onaga** — Community, 6th & Lucien 66521, James M. Cazier, Adm. — 913/889-4274

**Osborne** — Osborne County Memorial, 424 West New Hampshire 67473, Dona Stephenson, R.N., Adm. — 913/346-2121

**Oswego** — Oswego, Rt. 2, Box 10A 67356, Patrick Lawrence, Adm. — 316/795-2921

**Ottawa** — Ransom Memorial, 13th & South Main 66067, Gary A. Moore, Adm. — 913/242-3344

**Overland Park** — Suburban Medical Center, P.O. Box 5959 66215, Jack Salberg, Exec. Dir. — 913/492-1000

**Paola** — Miami County, 501 South Hospital Drive 66071, Robert E. Johnson, Adm. — 913/294-2327

**Parsons** — Labette County Medical Center, P.O. Box 767 67357, Jerry D. Lilley, Adm. — 316/421-4880

**Parsons** — Katy Memorial, 400 Katy 67357, Leslie Hammett, Assoc. Adm. — 316/421-2700

**Phillipsburg** — Phillips County, P.O. Box 607 67661, Joanne Johnson, R.N., Adm. — 913/543-5226

**Pittsburg** — Mt. Carmel Medical Center, Centennial & Rouse 66762, Sister Agnes Weber, Adm. — 316/231-6100

**Plainville** — Plainville Rural, 304 South Colorado 67663, William C. Brickley, Adm. — 913/434-4553

**Pratt** — Pratt Regional Medical Center, Third & Commodore 67124, Sister Mary Alice Girrens, Pres. and Chief Executive Officer — 316/672-6476

**Quinter** — Gove County, 5th & Garfield 67752, Mike Shaw, Adm. — 913/754-3341

**Ransom** — Ness County District #1, P.O. Box 268 67572, Fern Mishler, R.N., Adm. — 913/731-2231

**Russell** — Russell City, 200 South Main 67665, L. Paul Grummer, Adm. — 913/483-3131

**Sabetha** — Sabetha Community, 14th & Oregon 66534, Rita Becker, R.N., Adm. — 913/284-2121

**St. Francis** — Cheyenne County, 210 W. First 67756, Helen Burnham, R.N., Adm. — 913/332-2104

**St. John** — St. John District, 609 East 1st 67576, Art Thomas, Adm. — 316/549-3255

**Salina** — Asbury, P.O. Box 1608 67401, Clay D. Edmands, Adm. — 913/827-4411

**Salina** — St. John's, P.O. Box 1688 67401, Roy E. White, Adm. — 913/827-5591



**Satanta** — Satanta District, P.O. Box 159 67870, Carlyle Kiehne, Adm. — 316/649-2200

**Scott City** — Scott County, 309 East Third 67871, Jackie John, R.N., Supt. — 316/872-5811

**Sedan** — Sedan City, P.O. Box C 67361, Gary Martin, Adm. — 316/725-3115

**Seneca** — Nemaha Valley Community, 604 Nemaha 66538, Helen McGinty, R.N., Adm. — 913/336-6181

**Shawnee Mission** — Shawnee Mission Medical Center, 74th & Grandview 66204, Thomas W. Flynn, Exec. Dir. — 913/676-2000

**Smith Center** — Smith County Memorial, 614 South Main Street 66967, Lucille Herman, R.N., Adm. — 913/282-6661

**Spearville** — Spearville District, Hall & Dorsett 67876, Don Kessen, Adm. — 316/385-2661

**Stafford** — Stafford District, 502 South Buckeye 67578, Robert G. Gibb, Adm. — 316/234-5221

**Syracuse** — Hamilton County, P.O. Box 909 67878, Gene Shirley, Adm. — 316/384-7461

**Topeka** — Memorial, 600 Madison 66607, Ivan D. Anderson, Adm. — 913/354-5100

**Topeka** — C F. Menninger Memorial, P.O. Box 829 66601, Edward J. Zoble, Adm. — 913/234-9566

**Topeka** — St. Francis Hospital & Medical Center, 1700 West 7th 66606, Sister Ann Marita Loosen, Adm. — 913/295-8000

**Topeka** — Stormont-Vail Regional Medical Center, 1500 West 10th 66606, Howard M. Chase, Pres. and Chief Exec. Officer — 913/354-6000

**Tribune** — Greeley County, 308 Greeley 67879, Irene Pierce, R.N., Adm. — 316/376-4222

**Ulysses** — Bob Wilson Memorial, 415 North Main 67880, Leo Miller, Adm. — 316/356-1266

**WaKeeney** — Trego County-Lemke Memorial, 320 Thirteenth Street 67672, Jim Wahlmeir, Adm. — 913/743-2134

**Wamego** — Wamego City, 711 Genn Drive 66547, Rogers L. Brazier, Adm. — 913/456-2295

**Washington** — Washington County, East Third Street 66968, Beth Koch, R.N., Adm. — 913/325-2211

**Wellington** — St. Lukes, 1323 North A Street 67152, James Gallemore, Adm. — 316/326-7451

**Wellington** — Wellington Hospital & Clinic, 924 South Washington Avenue 67152, Regina E. Cantrell, Adm. — 316/326-3353

**Westmoreland** — Dechairo Hospital, Inc., First & North Streets 66549, Donn Demaree, Adm. — 913/457-3311

**Wichita** — Osteopathic, 2622 West Central Avenue 67203, Wayne Mathias, Adm. — 316/945-9161

**Wichita** — St. Francis, 929 North St. Francis 67214, Sister Mary Sylvia Egan, Pres. and Chief Executive Officer — 316/268-5000

**Wichita** — St. Joseph Medical Center, 3600 East Harry Street 67218, Joseph A. Heeb, Adm. — 316/685-1111

**Wichita** — Wesley Medical Center, 550 North Hillside 67214, Roy C. House, Pres. and Chief Executive Officer — 316/688-2468

A. B. Davis, Jr., Exec. V.P. and Chief Operating Officer — Ext. 7114

**Winchester** — Jefferson County Memorial, 66097, Ben Witzke, Adm. — 913/774-4340

**Winfield** — William Newton Memorial, 1300 East 5th 67156, Harold W. Steadham, Adm. — 316/221-2300

### STATE INSTITUTIONS

**Kansas City** — Rainbow Mental Health Facility, 2205 W. 36th Street 66103, Jack Southwick, Adm. 913/384-1880

**Larned** — Larned State Hospital, P.O. Box 89 67550, Mrs. Hildreth Hultine, Supt. — 316/285-2131

**Norton** — Norton State Hospital, 67654, Sam H. Freeland, Supt. — 913/877-3301

**Osawatomie** — Osawatomie State Hospital, P.O. Box 500 66064, J. Russell Mills, Supt. — 913/755-3151

**Parsons** — Parsons State Hospital & Training Center, P.O. Box 738 67357, Gary Daniels, M.D., Supt. — 316/421-6550

**Topeka** — Kansas Neurological Inst., 3107 West 21st Street 66604, Ann M. Marshall, Ph.D., Supt. — 913/296-5301

**Topeka** — Topeka State Hospital, 2700 West 6th 66606, Eberhard G. Burdzik, M.D., Supt. — 913/296-4307

**Winfield** — Winfield State Hospital & Training Center, R.R. #1 67156, Michael L. Dey, Ph.D., Supt. — 316/221-1200

### VETERANS HOSPITALS AND MILITARY HOSPITALS

**Ft. Leavenworth** — U. S. Munson Army Hospital, Pope and Biddle Avenue 66027, Lt. Col. Philip Dorsey, Hospital Exec. Officer — 913/684-3241

**Fort Riley** — Irwin Army Comm. Hospital, 66442, Major Jerry Thompson, Chief, Patient Adm. Division — 913/239-3663

**Leavenworth** — Veterans Administration Center, 66048, Margaret C. Michelson, Center Director — 913/682-2000

**Topeka** — Veterans Administration Medical Center, 2200 Gage 66622, Paul K. Kennedy, Medical Center Director — 913/272-3111

**Wichita** — McConnell Air Force Base, USAF Hospital 67221, Major Joseph A. Borho, Hosp. Adm. — 316/685-9254

**Wichita** — Veterans Administration Center, 5500 E. Kellogg 67218, George B. Lappin, Dir. — 316/685-2221

### POISON CONTROL CENTERS

**Atchison** — Atchison Hospital — 913/367-2131

**Dodge City** — Trinity Hospital — 316/483-8133

**Emporia** — Newman Memorial Hospital — 316/342-7120

**Fort Scott** — Mercy Hospital — Day: 316/223-3100; Night: 316/223-2200

**Great Bend** — Central Kansas Medical Center — Day: 316/793-3523; Night: 316/792-2511

**Hays** — Hadley Memorial Hospital — Day: 913/625-2515, Ext. 237; Night: 913/625-3441

**Kansas City**  
University of Kansas Medical Center — 913/588-6633

Bethany Hospital — 913/621-6600

**Lawrence** — Lawrence Memorial Hospital — Day: 913/843-3680 or 842-4477; Night: 913/843-5874

**Parsons** — Labette County Medical Center — 316/421-4880

**Salina** — St. John's Hospital — 913/827-5591, Ext. 222

**Topeka** — Stormont-Vail Hospital — 913/354-6100

**Wichita** — Wesley Hospital — 316/688-2222

**Kansas Poison Control Information Center:**  
Kansas Department of Health, Food and Drug Division, Topeka — Evan Wright, Director — 913/862-9360, Ext. 541

**Antivenin Index Center** — 405/271-5454

### HOME HEALTH AGENCIES

**Anderson County Hospital**, Garnett 60032 — 913/448-3131

**Barton County Health Dept.**, Courthouse, Great Bend 67530 — 316/793-7879

**Butler-Greenwood County Health Dept.**, Courthouse, El Dorado 67042 — 316/321-3400

**Clay County Hospital**, Clay Center 67432 — 913/632-2144

**Cloud County Health Dept.**, Courthouse, Concordia 66901 — 913/243-3588

**Coffey County Health Dept.**, Courthouse, Burlington 66839 — 316/364-5831

**Douglas County Visiting Nurses' Association**, 342 Missouri St., Lawrence 66044 — 913/843-3738

**Ellis County-St. Anthony Hospital**, Hays 67601 — 913/625-2556

**Ellsworth County Health Dept.**, Courthouse, Ellsworth 67439 — 913/472-4234

**Ford County Health Dept.**, Courthouse, Dodge City 67801 — 316/225-4991

**Franklin County Health Dept.**, 112 W. Tecumseh, Ottawa 60667 — 913/242-1873

**Graham County Hospital**, Hill City 67642 — 913/674-2121

**Harper County Health Dept.**, Courthouse, Anthony 67003 — 316/842-5264

**Harvey County Health Dept.**, Courthouse, Newton 67114 — 316/283-1060

**Jackson County Health Dept.**, Courthouse, Holton 66436 — 913/364-2670

**Jefferson County Health Dept.**, Courthouse, Oskaloosa 66066 — 913/863-2447

**Kansas City Visiting Nurses' Association**, One Gateway Center, Suite 219, Kansas City, Kansas 66117 — 913/371-3770

**Kingman County Health Dept.**, Courthouse, Kingman, 67068 — 316/532-2221

**Labette County Health Dept.**, Box 786, Parsons 67357 — 316/421-4350

**Logan County Hospital**, Oakley 67748 — 913/672-3211

**Lyon County Home Health Service**, Newman Memorial Hospital, Emporia 66801 — 316/342-8562

**McPherson County Health Dept.**, Courthouse, McPherson 67460 — 316/241-1753

**Morris County Health Dept.**, Courthouse, Council Grove 66846 — 316/767-5175

**Osage County Health Dept.**, Courthouse, Lyndon 66451 — 913/828-3281

**Pratt County Health Dept.**, 106 E. 2nd, Pratt 67124 — 316/672-6122

**Reno County-St. Elizabeth Hospital**, 500 W. 20th, Hutchinson 67501 — 316/665-5531

**Republic County Health Dept.**, Courthouse, Belleville 66935 — 913/527-5385

**Rice County Health Dept.**, Courthouse, Lyons 67554 — 316/257-2171

**Riley County Health Dept.**, 616 Poyntz, Manhattan 66502 — 913/776-9721

**Russell County Health Dept.**, Courthouse, Russell 67665 — 913/483-2641

**Salina-Saline County Health Dept.**, 300 W. Ash, Salina 67401 — 913/827-9376



**Sedgwick County Health Dept.**, 1900 E. 9th,  
Wichita 67214 — 316/268-8433

**Shawnee County Health Dept.**, 1615 W. 8th,  
Topeka 66606 — 913/233-8961

**Sheridan County Hospital**, Hoxie 67740 — 913/  
675-3281

**Thomas County-St. Thomas Hospital**, Colby  
67701 — 913/462-3335

**Washington County Health Dept.**, Washington  
66968 — 913/325-2600

## GENETIC COUNSELING CENTERS

**Kansas City** — Genetic Counseling Center, Division of Medical Genetics, K.U.M.C., 39th & Rainbow Blvd., Kansas City, KS 66103 — 913/588-6043 — R. Neil Schimke, M.D., Director

**Topeka** — Genetic Counseling Center, 2029 McAlister, Topeka, KS 66604 — 913/273-6173 — David E. Gray, M.D., Director

**Wichita** — Genetic Counseling Unit, Wesley Medical Center, 550 N. Hillside, Wichita, KS 67214 — 316/688-2468 — Sechin Cho, M.D., Director

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## To Contact Your Legislators:

### U. S. CONGRESSIONAL DELEGATION

#### *Senators:*

Robert Dole, 2213 Dirksen Senate Office Bldg.,  
20510. (202) 224-6521

Nancy L. Kassebaum, 304 Russell Senate Office  
Bldg., 20510. (202) 224-4774

#### *Representatives:*

1. Pat Roberts, 1428 Longworth House Office  
Bldg., 20515. (202) 225-2715

2. Jim Jeffries, 128 Cannon House Office Bldg.,  
20515. (202) 225-6601

3. Larry Winn, Jr., 2416 Rayburn House Office  
Bldg., 20515. (202) 225-2865

4. Dan Glickman, 1507 Longworth House Office  
Bldg., 20515. (202) 225-6216

5. Robert Whittaker, 516 Cannon House Office  
Bldg., 20515. (202) 225-3911

When writing, the following form is appropriate:

#### *Senators:*

Honorable John Doe,  
United States Senate  
Address

Dear Senator Doe:

#### *Representatives:*

Honorable John Doe,  
House of Representatives  
Address

Dear Mr. Doe:

### THE PRESIDENT

The White House,  
1600 Pennsylvania Ave., N.W., 20500  
(202) 456-1414

### KANSAS LEGISLATURE

To write state Senators and Representatives, the following addresses may be used:

#### *Senators:*

Honorable John Doe  
Senate Chambers  
State Capitol Building  
Topeka, KS 66612

Dear Senator Doe:

Phone: (913) 296-7300

#### *Representatives:*

Honorable John Doe  
House of Representatives  
State Capitol Building  
Topeka, KS 66612

Dear Representative Doe:

(Phone: (913) 296-7500)

### THE GOVERNOR

State Capitol Bldg.  
Topeka, KS 66612  
(913) 296-3232

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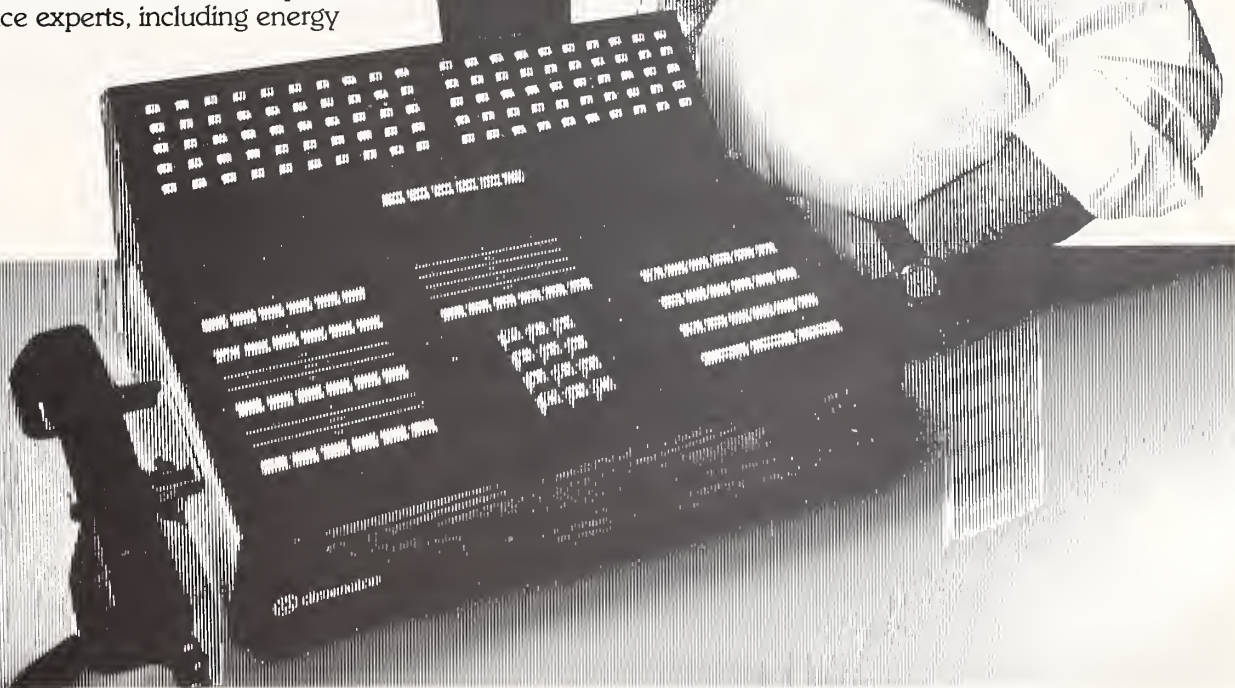
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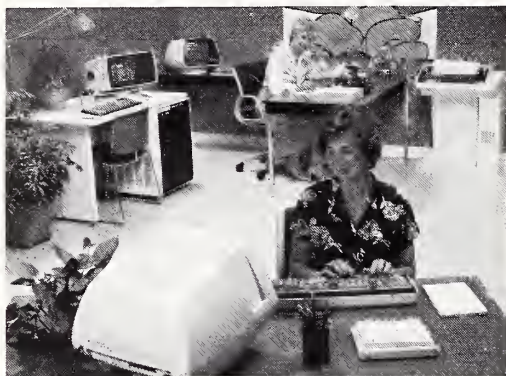
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## Brief Summary of Prescribing Information.

**Indications and Usage:** Management of anxiety disorders or short-term relief of symptoms of anxiety or anxiety associated with depressive symptoms. Anxiety or tension associated with stress of everyday life usually does not require treatment with an anxiolytic.

Effectiveness in long-term use, i.e., more than 4 months, has not been assessed by systematic clinical studies. Reassess periodically usefulness of the drug for the individual patient.

**Contraindications:** Known sensitivity to benzodiazepines or acute narrow-angle glaucoma.

**Warnings:** Not recommended in primary depressive disorders or psychoses. As with all CNS-acting drugs, warn patients not to operate machinery or motor vehicles, and of diminished tolerance for alcohol and other CNS depressants.

**Physical and Psychological Dependence:** Withdrawal symptoms like those noted with barbiturates and alcohol have occurred following abrupt discontinuance of benzodiazepines (including convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Addiction-prone individuals, e.g. drug addicts and alcoholics, should be under careful surveillance when on benzodiazepines because of their predisposition to habituation and dependence. Withdrawal symptoms have also been reported following abrupt discontinuance of benzodiazepines taken continuously at therapeutic levels for several months.

**Precautions:** In depression accompanying anxiety, consider possibility for suicide.

For elderly or debilitated patients, initial daily dosage should not exceed 2mg to avoid oversedation. Terminate dosage gradually since abrupt withdrawal of any antianxiety agent may result in symptoms like those being treated: anxiety, agitation, irritability, tension, insomnia and occasional convulsions. Observe usual precautions with impaired renal or hepatic function. Where gastrointestinal or cardiovascular disorders coexist with anxiety, note that lorazepam has not been shown of significant benefit in treating gastrointestinal or cardiovascular component. Esophageal dilation occurred in rats treated with lorazepam for more than 1 year at 6mg/kg/day. No effect dose was 1.25mg/kg/day (about 6 times maximum human therapeutic dose of 10mg/day). Effect was reversible only when treatment was withdrawn within 2 months of first observation. Clinical significance is unknown, but use of lorazepam for prolonged periods and in geriatrics requires caution and frequent monitoring for symptoms of upper G.I. disease. Safety and effectiveness in children under 12 years have not been established.

**ESSENTIAL LABORATORY TESTS:** Some patients have developed leukopenia, some have had elevations of LDH. As with other benzodiazepines, periodic blood counts and liver function tests are recommended during long-term therapy.

**CLINICALLY SIGNIFICANT DRUG INTERACTIONS:** Benzodiazepines produce CNS depressant effects when administered with such medications as barbiturates or alcohol.

**CARCINOGENESIS AND MUTAGENESIS:** No evidence of carcinogenic potential emerged in rats during an 18-month study. No studies regarding mutagenesis have been performed.

**PREGNANCY:** Reproductive studies were performed in mice, rats, and 2 strains of rabbits. Occasional anomalies (reduction of tarsals, tibia, metatarsals, malrotated limbs, gastroschisis, malformed skull and microphthalmia) were seen in drug-treated rabbits without relationship to dosage. Although all these anomalies were not present in the concurrent control group, they have been reported to occur randomly in historical controls. At 40mg/kg and higher, there was evidence of fetal resorption and increased fetal loss in rabbits which was not seen at lower doses. Clinical significance of these findings is not known. However, increased risk of congenital malformations associated with use of minor tranquilizers (chloridiazepoxide, diazepam and meprobamate) during first trimester of pregnancy has been suggested in several studies. Because use of these drugs is rarely a matter of urgency, use of lorazepam during this period should almost always be avoided. Possibility that a woman of child-bearing potential may be pregnant at institution of therapy should be considered. Advise patients if they become pregnant to communicate with their physician about desirability of discontinuing the drug. In humans, blood levels from umbilical cord blood indicate placental transfer of lorazepam and its glucuronide.

**NURSING MOTHERS:** It is not known if oral lorazepam is excreted in human milk like other benzodiazepines. As a general rule, nursing should not be undertaken while on a drug since many drugs are excreted in milk.

**Adverse Reactions,** if they occur, are usually observed at beginning of therapy and generally disappear on continued medication or on decreasing dose. In a sample of about 3,500 anxious patients, most frequent adverse reaction is sedation (15.9%), followed by dizziness (6.9%), weakness (4.2%) and unsteadiness (3.4%). Less frequent are disorientation, depression, nausea, change in appetite, headache, sleep disturbance, agitation, dermatological symptoms, eye function disturbance, various gastrointestinal symptoms and autonomic manifestations. Incidence of sedation and unsteadiness increased with age. Small decreases in blood pressure have been noted but are not clinically significant, probably being related to relief of anxiety.

**Overdosage:** In management of overdosage with any drug, bear in mind multiple agents may have been taken. Manifestations of overdosage include somnolence, confusion and coma. Induce vomiting and/or undertake gastric lavage followed by general supportive care, monitoring vital signs and close observation. Hypotension, though unlikely, usually may be controlled with Levarterenol Bitartrate Injection U.S.P. Usefulness of dialysis has not been determined.

# Ativan® for (lorazepam) Anxiety

**Dosage:** Individualize for maximum beneficial effects. Increase dose gradually when needed, giving higher evening dose before increasing daytime doses. Anxiety, usually 2-3mg/day given b.i.d. or t.i.d.; dosage may vary from 1 to 10mg/day in divided doses. For elderly or debilitated, initially 1-2mg/day; insomnia due to anxiety or transient situational stress, 2-4mg h.s.

**How Supplied:** 0.5, 1.0 and 2.0mg tablets.





# Four practical reasons to prescribe **Ativan<sup>®</sup>** for (lorazepam) **Anxiety\***



# 1

## No interaction with more than 300 drugs<sup>†</sup>

In clinical studies, Ativan was given concomitantly with hundreds of medications, including gastrointestinal and cardiovascular, with no reported interactions. Whereas the interaction of diazepam and cimetidine has been shown to cause increased sedation in patients taking both drugs, the clearance of Ativan is not delayed by Tagamet.<sup>‡</sup>



# 2





## Lets most patients stay active

Long-acting benzodiazepines have long-acting metabolites with activity which can produce excessive accumulation that may lead to unwanted sedation. Ativan<sup>®</sup> has no active metabolites, reaches steady state in 2 to 3 days and usually does not cause oversedation. Also, the shorter half-life of Ativan is consistent with b.i.d. dosage, so drug hangover is seldom a problem the next morning.



# 3

## Not appreciably affected by aging

Unlike the long-acting benzodiazepines—diazepam , chlordiazepoxide , clorazepate  and prazepam  — the metabolism and clearance of Ativan are not appreciably affected by the aging process.



# 4

## Not significantly affected by liver dysfunction

Ativan<sup>®</sup> is metabolized in one simple step to an inactive glucuronide; its absorption and excretion are not significantly altered by cirrhosis or hepatitis. By contrast, the metabolism of diazepam and chlordiazepoxide has been reported to be significantly altered in patients with liver dysfunction.

*See important information on following page.*

\* Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic.

† All benzodiazepines, however, produce additive effects when given with CNS depressants, such as barbiturates or alcohol.

‡ Tagamet (cimetidine) is a registered trademark of Smith Kline & French Laboratories, Division of SmithKline Corporation.

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**September 17-20, 1981**  
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FIFTH INTERNATIONAL CONFERENCE



# KMS Judicial Committee

In 1979 the Kansas Medical Society House of Delegates adopted Resolution No. 24 establishing the Judicial Committee and charging the committee with the responsibility of reviewing and acting on grievances or matters of ethics involving a member of this Society. The committee will conduct such inquiries and investigations as are needed to render timely decisions on matters referred to it. Decisions of the committee may be appealed to the Council. Under the leadership of Franklin G. Bichlmeier, M.D., Chairman, the committee, with the assistance of Kansas Medical Society Legal Counsel, developed an operations procedure to guarantee physicians' due process in the investigation of and resolution of complaints and disputes. The committee also developed model due process procedures for component medical societies to adopt, if interested. Printed below are the procedures of the Judicial Committee. Copies of procedure for component medical societies are available upon request from the Kansas Medical Society office.

## PROCEDURES OF THE JUDICIAL COMMITTEE

The Judicial Committee shall hear and investigate complaints regarding the medical or ethical practice of members of the Society and such non-members as may consent to such proceedings. The Judicial Committee will normally not investigate complaints in situations wherein litigation is threatened or known to be contemplated.

Any complaint coming to the Committee's attention shall first be referred to the county medical society to which the subject member belongs for investigation and action. Following action by the county medical society the matter may be heard upon appeal by the Judicial Committee upon the procedure set forth in Section A. If the county medical society fails to take action upon the complaint, the matter shall be heard and determined by the Judicial Committee upon the procedure set forth in Section B.

### A. Procedure Regarding Appeals

1. An appeal to the Judicial Committee from final action by the county medical society may be initiated by either the complainant or respondent by filing a notice of appeal within 30 days of the final action of the county medical society with the chairman of the Judicial Committee.

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95% of colon/rectal surgeons surveyed\* add TUCKS® pads concomitantly to preferred suppository/ointment/cream medication for best results...

In Acute Hemorrhoidal Flare-up  
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common anorectal disorders

Plus  
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that can irritate  
tender anorectal tissue.

Please see following page for full prescribing information.

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\*Data on file Parke-Davis Marketing Research Dept.  
\*\*Based on total prescriptions filled for hemorrhoidal preparations during the first three quarters of 1980. The National Prescription Audit, IMS America, Inc., September 1980.

PD-400-JA (1-81) (1-81)



**TUCKS® Pre-Moistened Hemorrhoidal/Vaginal Pads**

**Hemorrhoids and other anorectal uses**—TUCKS extra-soft cloth pads allow for the gentlest possible application to tender, inflamed, hemorrhoidal tissue. TUCKS are effective cleansing pads for everyday personal hygiene. Used on outer rectal areas, they remove residue that can bring on more irritation. Pads are premoistened with 50% witchhazel, 10% glycerin USP and de-ionized purified water USP which acts as a cooling, soothing lotion to help comfort sensitive anorectal tissue.

**Vaginal Uses**—Comforting as an adjunct in postoperative care after episiotomies and other vaginal surgery or when relief from vaginal itching, burning or irritation is required.

**ANUSOL-HC® SUPPOSITORIES**

Hemorrhoidal Suppositories with Hydrocortisone Acetate

**ANUSOL-HC® CREAM**

Rectal Cream with Hydrocortisone Acetate

**Caution:** Federal law prohibits dispensing without prescription.

**Description:** Each Anusol-HC Suppository contains hydrocortisone acetate, 10.0 mg; bismuth subgallate, 2.25%; bismuth resorcin compound, 1.75%; benzyl benzoate, 1.2%; Peruvian balsam, 1.8%; zinc oxide, 11.0%; also contains the following inactive ingredients: dibasic calcium phosphate, and certified coloring in a hydrogenated vegetable oil base.

Each gram of Anusol-HC Cream contains hydrocortisone acetate, 5.0 mg; bismuth subgallate, 22.5 mg; bismuth resorcin compound, 17.5 mg; benzyl benzoate, 12.0 mg; Peruvian balsam, 18.0 mg; zinc oxide, 110.0 mg; also contains the following inactive ingredients: propylene glycol, propylparaben, methylparaben, polysorbate 60 and sorbitan monostearate in a water-miscible base of mineral oil, glyceryl stearate and water.

Anusol-HC Suppositories and Anusol-HC Cream help to relieve pain, itching and discomfort arising from irritated anorectal tissues. These preparations have a soothing, lubricant action on mucous membranes, and the antiinflammatory action of hydrocortisone acetate in Anusol-HC helps to reduce hyperemia and swelling.

The hydrocortisone acetate in Anusol-HC is primarily effective because of its antiinflammatory, antipruritic and vasoconstrictive actions.

**Indications and Usage:** Anusol-HC Suppositories and Anusol-HC Cream are adjunctive therapy for the symptomatic relief of pain, itching and discomfort in: external and internal hemorrhoids, proctitis, papillitis, cryptitis, anal fissures, incomplete fistulas, pruritus ani and relief of local pain and discomfort following anorectal surgery.

Anusol-HC is especially indicated when inflammation is present. After acute symptoms subside, most patients can be maintained on regular Anusol® Suppositories or Ointment.

**Contraindications:** Anusol-HC Suppositories and Anusol-HC Cream are contraindicated in those patients with a history of hypersensitivity to any of the components of the preparations.

**Warnings:** The safe use of topical steroids during pregnancy has not been fully established. Therefore, during pregnancy, they should not be used unnecessarily on extensive areas, in large amounts or for prolonged periods of time.

**Precautions:** **General:** Symptomatic relief should not delay definitive diagnoses or treatment.

Prolonged or excessive use of corticosteroids might produce systemic effects.

If irritation develops, Anusol-HC Suppositories and Anusol-HC Cream should be discontinued and appropriate therapy instituted.

In the presence of an infection the use of an appropriate antifungal or antibacterial agent should be instituted. If a favorable response does not occur promptly, the corticosteroid should be discontinued until the infection has been adequately controlled.

Anusol-HC is not for ophthalmic use.

**Pregnancy**

See "WARNINGS"

**Pediatric Use**

Care should be taken when using the corticosteroid hydrocortisone acetate in children and infants.

**Dosage and Administration:** Anusol-HC Suppositories—

Adults: Remove foil wrapper and insert suppository into the anus. Insert one suppository in the morning and one at bedtime for 3 to 6 days or until inflammation subsides. Then maintain comfort with regular Anusol Suppositories.

Anusol-HC Cream—Adults: After gentle bathing and drying of the anal area, remove tube cap and apply to the exterior surface and gently rub in. For internal use, attach the plastic applicator and insert into the anus by applying gentle continuous pressure. Then squeeze the tube to deliver medication. Cream should be applied 3 or 4 times a day for 3 to 6 days until inflammation subsides. Then maintain comfort with regular Anusol Ointment.

**NOTE:** If staining from either of the above products occurs, the stain may be removed from fabric by hand or machine washing with household detergent.

**How Supplied:** Anusol-HC Suppositories—boxes of 12 (N 0071-1089-07) and boxes of 24 (N 0071-1089-13) in silver foil strips with Anusol-HC printed in black.

Anusol-HC Cream—one-ounce tube (N 0071-3090-13) with plastic applicator.

Store between 59°-86°F (15°-30°C).  
1089C010

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2. The proceedings by the Judicial Committee shall be in the nature of an appellate review based upon the record of the hearing before the county medical society, the report of the county medical society, and any committees investigating the matter, and the additional material hereinafter set forth.

3. Either the complainant or the respondent seeking the review shall submit a written statement detailing the findings of fact, conclusions, and procedural matters with which he disagrees and his reasons for such disagreement. This written statement may cover any matters raised in any step.

4. If requested, the parties and their representatives may personally appear and make oral statements to the Committee and be questioned by members of the Committee.

5. Ordinarily, new or additional matters or evidence not raised or presented during the original hearing shall not be introduced at the Committee hearing. If unusual circumstances exist so that a party would be denied a fair hearing unless such material is received, the Committee in its sole discretion may determine whether such matters or evidence shall be considered or accepted. In the event such additional evidence or information is received the other party or parties shall be given a sufficient opportunity to present any additional matters required by reason of the introduction of such evidence.

6. Ordinarily a verbatim record of the Committee hearings, arguments or statements of parties shall not be secured; however, if evidentiary matters are received, the Committee shall arrange for a record to be made.

**B. Hearings by Judicial Committee**

1. If no evidentiary hearing has been held by the county medical society, or if the respondents named in the complaint belong to different county medical societies, the Judicial Committee shall hear the evidence regarding the complaint.

2. Prior to a complaint being heard, and as a condition precedent thereto, there shall be a finding by the Judicial Committee that probable cause exists to schedule a hearing.

3. Upon receipt of a complaint which has not been or will not be investigated by a county medical society, the chairman of the Committee shall refer the same to a committee member for an informal investigation. Such committee member shall contact the complainant and the respondent and take such further steps as may be necessary for the committee member to generally learn the nature of the allegations of the complaint and the defense thereto, and

formulate a determination of whether or not probable cause exists as set forth below. The committee member assigned to investigate the complaint shall prepare a report and communicate the same to other members of the Committee. The Committee shall then determine, either in a regular meeting or informally through a mail or telephone poll, whether or not probable cause exists to believe the respondent has deviated from acceptable care or ethical standards or has otherwise failed to meet the proper standards and qualifications required of members of the Kansas Medical Society.

4. If the Committee determines that no probable cause exists, then the matter shall be closed, subject to the right of appeal by the complainant to the Council of the Kansas Medical Society.

5. If the Committee finds that there is probable cause to believe that the member who is the subject of the complaint may have deviated from acceptable care or ethical standards or has otherwise failed to meet the proper standards and qualifications required of members of the Kansas Medical Society, then the Committee shall request that the complaint be written and set forth, to the best of the ability of complainant, in clear, definite and specific language, the particular acts or omissions of the physician involved, in such detail as to enable him to know the basis for the complaint.

6. Upon receipt of a written complaint a physician respondent shall be requested to file an answer to the complaint which shall be in writing and shall:

- a. respond specifically to the allegations contained in the complaint;
- b. provide any explanation or justification of the facts stated in the complaint;
- c. set forth any new material or other defenses;
- d. be signed by the respondent.

7. Meetings of the Committee shall be closed and the Committee shall respect the complete confidential nature of the complaint and the findings. No person other than the complainant, the respondent, and his counsel, stenographic reporter and counsel for the Committee, when desired by the Committee, shall be present, except for witnesses while testifying.

8. The Committee shall invite as a temporary, ex officio member, the Councilor from whose district a complaint shall have been submitted. In the event that the Councilor is a subject of the complaint, the alternate Councilor shall sit in his place.

9. In the event that any member of the Committee is the subject of the complaint, he shall be excluded during the Committee's deliberation and action on

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anorectal  
fires cool...

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**Anusol<sup>®</sup>**

Suppositories/Ointment  
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Premoistened hemorrhoidal/  
vaginal pads  
for temporary relief of  
occasional external anorectal  
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such complaint and from Committee membership, but shall otherwise retain the same rights and privileges as any other member of this Society.

10. The Judicial Committee may appoint one or more consultants or advisory committees consisting of members of the Society, or in some instances, non-members, who have knowledge and expertise in the specialty involved in the complaint. Such consultant or advisory committee shall investigate the matter under consideration to the extent requested by the Judicial Committee and report to the Judicial Committee and testify upon the same at the time of the hearing.

11. Discussions by the Committee after evidence is received shall be held in executive session.

12. There shall be no unnecessary delay in carrying on the investigation by the Committee.

13. Any complainant or respondent unwilling to appear personally before the Committee will be informed that such actions may lead to the possibility of the Committee's inferring that the complaint or answer lacks merit.

14. The complainant, and if necessary, the physician, will be requested to sign medical authorizations if the medical information is relevant to an issue before the Committee.

15. The chairman shall send the respondent a registered or certified letter at least fifteen (15) days before the date of the hearing containing a copy of the complaint, the time and place of the hearing, and a statement of his right to be present at the hearing to defend himself, to be represented by an attorney, and to receive a copy of any transcript.

16. A practitioner who fails without good cause to appear and proceed in such hearing shall be deemed to have waived his right to such hearing.

17. At the hearing the complainant and respondent member shall have the right to:

- a. call on and examine witnesses;
- b. introduce exhibits and
- c. question any witness on any matter relevant to the issue;
- d. impeach witnesses;
- e. rebut any evidence;
- f. request that the record of the hearing be made by use of a court reporter or an electronic recording unit at the parties' expense;

18. The hearing need not be conducted strictly according to rules of law relating to examination of witnesses or presentation of evidence. Relevant matter upon which responsible persons customarily rely in the conduct of serious affairs shall be admitted regardless of the admissibility of said evidence in a

court of law. Each party shall, prior to or during the hearing, be entitled to submit memoranda concerning any issues of law or fact, and such memoranda shall become a part of the hearing record. Affidavits may be considered if the personal presence of a witness may not be secured.

19. A record of the hearing shall be kept of sufficient accuracy to insure that an informed and valid judgment can be made by any group that may be later called upon to review the record and render a recommendation or decision in the matter.

20. Requests for continuance of the hearing may be granted by the Committee upon a showing of good cause.

21. The hearing Committee may recess the hearing and reconvene the same without additional notice for the convenience of the participants or for the purpose of obtaining new or additional evidence or consultation. Upon conclusion of the presentation of oral and written evidence, the hearing shall be closed. The Committee shall thereupon at a time convenient to itself conduct its deliberations outside the presence of the parties. Upon the conclusion of its deliberation, the hearing shall be declared finally adjourned.

22. Within ten (10) days after the final adjournment of the hearing the Committee shall prepare a written report of its findings and recommendations in the matter and shall forward the same to the Council of the Society, the complainant, and the respondent. Such report shall be approved by a majority of the Committee members and shall recommend to the Council of the Society that it:

- (a) Close the case with no further action;
- (b) Take action to expel, suspend, or reprimand a member;
- (c) Submit the information to an appropriate state or federal law enforcement agency;
- (d) Submit the information to the Kansas State Board of Healing Arts;

In addition, the Committee may recommend a settlement or express its advice to the respondent concerning the acts and conduct of the respondent.

23. The Council of the Society will defer action upon the Committee's recommendations for twenty (20) days following receipt, during which time the parties may submit additional comments or requests to the Council. The Council shall review the complaint, the investigative material, the material submitted by the parties, and the record of the hearing, and shall either approve, refer back for further consideration, modify or reverse the Judicial Committee's recommendation. A final decision will then be transmitted to the complainant and respondent.

# Medical School Codes

## UNITED STATES

The following is a list of medical schools in the United States and Puerto Rico, existing and extinct, arranged in state order and showing the code number by which each school is designated in the geographical section of this Directory. Existing approved schools are listed in capital letters.

### **001 Alabama**

001-02 UNIVERSITY OF ALABAMA SCHOOL OF MEDICINE, BIRMINGHAM

### **003 Arizona**

003-01 UNIVERSITY OF ARIZONA COLLEGE OF MEDICINE, TUCSON

### **004 Arkansas**

004-01 UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE, LITTLE ROCK

### **005 California**

005-02 UNIVERSITY OF CALIFORNIA SCHOOL OF MEDICINE, SAN FRANCISCO

005-06 UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MEDICINE, LOS ANGELES

005-11 STANFORD UNIVERSITY SCHOOL OF MEDICINE, PALO ALTO

005-12 LOMA LINDA UNIVERSITY SCHOOL OF MEDICINE, LOMA LINDA—LOS ANGELES

### **007 Colorado**

007-02 UNIVERSITY OF COLORADO SCHOOL OF MEDICINE, DENVER

### **008 Connecticut**

008-01 YALE UNIVERSITY SCHOOL OF MEDICINE, NEW HAVEN

### **010 District of Columbia**

010-01 GEORGE WASHINGTON UNIVERSITY SCHOOL OF MEDICINE, WASHINGTON

010-02 GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE, WASHINGTON

010-03 HOWARD UNIVERSITY COLLEGE OF MEDICINE, WASHINGTON

### **011 Florida**

011-02 UNIVERSITY OF MIAMI SCHOOL OF MEDICINE, MIAMI

011-03 UNIVERSITY OF FLORIDA COLLEGE OF MEDICINE, GAINESVILLE

### **012 Georgia**

012-01 MEDICAL COLLEGE OF GEORGIA, AUGUSTA

012-05 EMORY UNIVERSITY SCHOOL OF MEDICINE, ATLANTA

### **016 Illinois**

016-01 RUSH MEDICAL COLLEGE, CHICAGO

016-02 UNIVERSITY OF CHICAGO PRITZKER SCHOOL OF MEDICINE, CHICAGO

016-04 The Hahnemann Medical College and Hospital, Chicago

016-06 NORTHWESTERN UNIVERSITY MEDICAL SCHOOL, CHICAGO

016-11 UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE, CHICAGO

016-42 CHICAGO MEDICAL SCHOOL UNIVERSITY OF HEALTH SCIENCES, CHICAGO

016-43 LOYOLA UNIVERSITY STRITCH SCHOOL OF MEDICINE, MAYWOOD

### **017 Indiana**

017-20 INDIANA UNIVERSITY SCHOOL OF MEDICINE, INDIANAPOLIS

### **018 Iowa**

018-03 UNIVERSITY OF IOWA COLLEGE OF MEDICINE, IOWA CITY

### **019 Kansas**

019-02 UNIVERSITY OF KANSAS SCHOOL OF MEDICINE, KANSAS CITY



**020 Kentucky**

- 020-02 UNIVERSITY OF LOUISVILLE SCHOOL OF MEDICINE, LOUISVILLE
- 020-12 UNIVERSITY OF KENTUCKY COLLEGE OF MEDICINE, LEXINGTON

**021 Louisiana**

- 021-01 TULANE UNIVERSITY SCHOOL OF MEDICINE, NEW ORLEANS
- 021-05 LOUISIANA STATE UNIVERSITY SCHOOL OF MEDICINE, NEW ORLEANS

**022 Maine**

- 022-01 Bowdoin Medical School, Brunswick-Portland

**023 Maryland**

- 023-01 UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE, BALTIMORE
- 023-07 JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE, BALTIMORE

**024 Massachusetts**

- 024-01 HARVARD MEDICAL SCHOOL, BOSTON
- 024-07 TUFTS UNIVERSITY SCHOOL OF MEDICINE, BOSTON

**025 Michigan**

- 025-01 UNIVERSITY OF MICHIGAN MEDICAL SCHOOL, ANN ARBOR
- 025-07 WAYNE STATE UNIVERSITY SCHOOL OF MEDICINE, DETROIT

**026 Minnesota**

- 026-04 UNIVERSITY OF MINNESOTA MEDICAL SCHOOL, MINNEAPOLIS

**027 Mississippi**

- 027-01 UNIVERSITY OF MISSISSIPPI SCHOOL OF MEDICINE, JACKSON

**028 Missouri**

- 028-02 WASHINGTON UNIVERSITY SCHOOL OF MEDICINE, ST. LOUIS
- 028-03 UNIVERSITY OF MISSOURI SCHOOL OF MEDICINE, COLUMBIA
- 028-20 University Medical College of Kansas City
- 028-22 Ensworth Medical College, St. Joseph
- 028-34 ST. LOUIS UNIVERSITY SCHOOL OF MEDICINE, ST. LOUIS
- 028-43 Kansas City College of Medicine and Surgery
- 028-46 UNIVERSITY OF MISSOURI SCHOOL OF MEDICINE, KANSAS CITY
- 028-78 Kansas City College of Osteopathy & Surgery

**030 Nebraska**

- 030-05 UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE, OMAHA
- 030-06 CREIGHTON UNIVERSITY SCHOOL OF MEDICINE, OMAHA
- 030-07 Nebraska College of Medicine, Lincoln

**033 New Jersey**

- 033-05 COLLEGE OF MEDICINE & DENTISTRY OF NEW JERSEY — NEW JERSEY MEDICAL SCHOOL, NEWARK

**034 New Mexico**

- 034-01 UNIVERSITY OF NEW MEXICO SCHOOL OF MEDICINE, ALBUQUERQUE

**035 New York**

- 035-01 COLUMBIA UNIVERSITY COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK
- 035-03 ALBANY MEDICAL COLLEGE OF UNION UNIVERSITY, ALBANY
- 035-06 STATE UNIVERSITY OF NEW YORK AT BUFFALO, SCHOOL OF MEDICINE, BUFFALO
- 035-08 STATE UNIVERSITY OF NEW YORK COLLEGE OF MEDICINE, BROOKLYN
- 035-09 NEW YORK MEDICAL COLLEGE, NEW YORK
- 035-10 Bellevue Hospital Medical College, New York
- 035-15 STATE UNIVERSITY OF NEW YORK COLLEGE OF MEDICINE, SYRACUSE
- 035-19 NEW YORK UNIVERSITY SCHOOL OF MEDICINE, NEW YORK
- 035-20 CORNELL UNIVERSITY MEDICAL COLLEGE, NEW YORK

035-45 UNIVERSITY OF ROCHESTER SCHOOL OF MEDICINE AND DENTISTRY, ROCHESTER

035-46 ALBERT EINSTEIN COLLEGE OF MEDICINE OF YESHIVA UNIVERSITY, NEW YORK

**036 North Carolina**

036-01 UNIVERSITY OF NORTH CAROLINA SCHOOL OF MEDICINE, CHAPEL HILL

036-05 BOWMAN GRAY SCHOOL OF MEDICINE, WINSTON-SALEM

036-07 DUKE UNIVERSITY SCHOOL OF MEDICINE, DURHAM

**038 Ohio**

038-02 Eclectic Medical College, Cincinnati

038-06 CASE WESTERN RESERVE UNIVERSITY SCHOOL OF MEDICINE, CLEVELAND

038-40 OHIO STATE UNIVERSITY COLLEGE OF MEDICINE, COLUMBUS

038-41 UNIVERSITY OF CINCINNATI COLLEGE OF MEDICINE, CINCINNATI

038-43 MEDICAL COLLEGE OF OHIO AT TOLEDO, TOLEDO

**039 Oklahoma**

039-01 UNIVERSITY OF OKLAHOMA SCHOOL OF MEDICINE, OKLAHOMA CITY

039-79 OKLAHOMA COLLEGE OF OSTEOPATHIC MEDICINE AND SURGERY, TULSA

**040 Oregon**

040-02 UNIVERSITY OF OREGON MEDICAL SCHOOL, PORTLAND

**041 Pennsylvania**

041-01 UNIVERSITY OF PENNSYLVANIA SCHOOL OF MEDICINE, PHILADELPHIA

041-02 JEFFERSON MEDICAL COLLEGE OF THOMAS JEFFERSON UNIVERSITY, PHILADELPHIA

041-07 MEDICAL COLLEGE OF PENNSYLVANIA, PHILADELPHIA

041-09 HAHNEMANN MEDICAL COLLEGE AND HOSPITAL, PHILADELPHIA

041-12 UNIVERSITY OF PITTSBURGH SCHOOL OF MEDICINE, PITTSBURGH

041-13 TEMPLE UNIVERSITY SCHOOL OF MEDICINE, PHILADELPHIA

041-77 Philadelphia College of Osteopathic Medicine, Philadelphia

**042 Puerto Rico**

042-01 UNIVERSITY OF PUERTO RICO SCHOOL OF MEDICINE, SAN JUAN

**045 South Carolina**

045-01 MEDICAL UNIVERSITY OF SOUTH CAROLINA COLLEGE OF MEDICINE, CHARLESTON

**047 Tennessee**

047-05 VANDERBILT UNIVERSITY SCHOOL OF MEDICINE, NASHVILLE

047-06 UNIVERSITY OF TENNESSEE COLLEGE OF MEDICINE, MEMPHIS

047-07 MEHARRY MEDICAL COLLEGE SCHOOL OF MEDICINE, NASHVILLE

**048 Texas**

048-02 UNIVERSITY OF TEXAS MEDICAL BRANCH, GALVESTON

048-04 BAYLOR COLLEGE OF MEDICINE, HOUSTON

048-12 UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL SCHOOL, DALLAS

048-13 UNIVERSITY OF TEXAS MEDICAL SCHOOL, SAN ANTONIO

**049 Utah**

049-01 UNIVERSITY OF UTAH COLLEGE OF MEDICINE, SALT LAKE CITY

**050 Vermont**

050-02 UNIVERSITY OF VERMONT COLLEGE OF MEDICINE, BURLINGTON

**051 Virginia**

051-01 UNIVERSITY OF VIRGINIA SCHOOL OF MEDICINE, CHARLOTTESVILLE



051-04 MEDICAL COLLEGE OF VIRGINIA HEALTH SCIENCES DIVISION OF  
VIRGINIA COMMONWEALTH UNIVERSITY, RICHMOND

**054 Washington**

054-04 UNIVERSITY OF WASHINGTON SCHOOL OF MEDICINE, SEATTLE

**055 West Virginia**

055-01 WEST VIRGINIA UNIVERSITY SCHOOL OF MEDICINE, MORGAN-  
TOWN

**056 Wisconsin**

056-05 UNIVERSITY OF WISCONSIN MEDICAL SCHOOL, MADISON

056-06 MEDICAL COLLEGE OF WISCONSIN, MILWAUKEE

### FOREIGN MEDICAL SCHOOL CODES

#### CANADA

**060 Alberta**

060-01 University of Alberta Faculty of Medicine, Edmonton

**061 British Columbia**

061-01 University of British Columbia Faculty of Medicine, Vancouver

**062 Manitoba**

062-01 University of Manitoba Faculty of Medicine, Winnipeg

**065 Ontario**

065-01 University of Toronto Faculty of Medicine, Toronto

065-05 Queen's University Faculty of Medicine, Kingston

**067 Quebec**

067-01 McGill University Faculty of Medicine, Montreal

### OTHER FOREIGN

**118 Afghanistan**

118-01 Faculty of Medicine, Kabul University, Kabul

**132 Argentina**

132-01 Facultad de Ciencias Medicas de la Universidad de Buenos Aires, Buenos Aires

132-02 Facultad de Ciencias Medicas de la Universidad Nacional de Cordoba, Cordoba

132-04 Facultad de Ciencias Medicas, Farmacia y Ramos Menores de la Universidad  
Nacional del Litoral, Rosario, Santa Fe

132-06 Facultad de Ciencias Medicas de la Universidad Nacional de Cuyo, Mendoza,  
Mendoza

**143 Australia**

143-03 Faculty of Medicine University of Sydney, Sydney, New South Wales

**154 Austria**

154-07 Medizinische Fakultät der Universität Wien, Wien (407-26 from March 13,  
1938 to June, 1945)

**165 Belgium**

165-01 Faculté de Médecine et de Pharmacie Université libre de Bruxelles, Bruxelles

**176 Bolivia**

176-02 Facultad de Ciencias Medicas de la Universidad Mayor Real y Pontificia de San  
Francisco Xavier de Chuquisaca, Sucre

176-03 Facultad de Medicina de la Universidad Mayor de San Simon, Cochabamba

**215 Cambodia**

215-01 Ecole Royal de Médecine Du Cambodge, Phnompenh

**231 Chile**

231-01 Facultad de Medicina de la Universidad de Chile, Santiago

**242 China**

242 China (also see 243 Effective January 1, 1977).

- 242-09 St. John's University (Pennsylvania Medical School, Shanghai, Kiangsu (Extinct))
- 242-16 National Shanghai Medical College, Shanghai, Kiangsu
- 242-17 West China Union University College of Medicine and Dentistry, Chengtu, Szechuan
- 242-22 Aurora University Faculty of Medicine, Shanghai, Kiangsu (Extinct)
- 242-39 Shansi University Medical College, Taiyuan, Shansi

#### **243 China**

- 243-38 National Honan University Medical College, Kaifeng, Honan (242-38 Prior to 1-1-71)
- 243-51 National Defense Medical Center, School of Medicine, Shanghai, Kiangsu (242-51 Prior to 1-1-71)

#### **244 Taiwan**

- 244 Taiwan (Formosa) effective 1-1-71
- 244-02 College of Medicine National Taiwan University, Taipei (385-02 Prior to 1-1-71)
- 244-04 Taipei Medical College, Taipei (385-04 Prior to 1-1-71)

#### **264 Colombia**

- 264-01 Facultad de Medicina de la Universidad Nacional de Colombia Ciudad Universitaria, Bogota, Cundinamarca
- 264-02 Facultad de Medicina de la Universidad de Cartagena, Cartagena, Bolivar
- 264-04 Facultad de Medicina de la Pontificia Universidad Javeriana, Bogota, Cundinamarca
- 264-06 Facultad de Medicina de la Universidad de Caldas, Manizales, Caldas
- 264-07 Facultad de Medicina de la Universidad del Cauca, Popayan, Cauca

#### **275 Cuba**

- 275-01 Facultad de Medicina de la Universidad de la Habana, La Habana

#### **308 Dominican Republic**

- 308-01 Facultad de Medicina de la Universidad de Santo Domingo, Ciudad, Trujillo

#### **319 Ecuador**

- 319-01 Facultad de Ciencias Medicas de la Universidad Central, Quito

#### **330 Egypt (United Arab Republic)**

- 330-02 Kasr-el-Aini-Faculty of Medicine Cairo University, Cairo (Formerly Fouad First University Faculty of Medicine)
- 330-03 Faculty of Medicine Alexandria University, Alexandria

#### **352 England**

- 352-05 School of Medicine University of Leeds, Leeds
- 352-07 University of London Faculty of Medicine, London
- 352-11 Registrable Qualifications granted by English Conjoint Board (Royal College of Surgeons of England/Royal College of Physicians of London)

#### **385 Formosa (Taiwan)**

- 385 (Also see 244 Taiwan [Effective 1-1-71])
- 385-01 Kaohsiung (takau) Medical College, Kaohsiung
- 385-02 College of Medicine National Taiwan University, Taipei
- 385-03 National Defense Medical Center, Taipei
- 385-05 China Medical College, Taichung

#### **396 France**

- 396-06 Faculte de Medecine de l'Universite de Paris, Paris, Seine
- 396-07 Faculte mixte de Medecine et de Pharmacie de l'Universite de Toulouse, Toulouse, Haute-Garonne

#### **407 Germany**

- 407 Also see 408-409—East and West Germany (Effective 1-1-71)
- 407-07 Medizinische Fakultat der Georg-August-Universitat, Gottingen, Niedersachsen
- 407-10 Medizinische Fakultat der Universitat Heidelberg, Heidelberg, Baden-Wurttemberg



- 407-15 Medizinische Fakultät der Philipps-Universität, Marburg/Lahn, Hessen
- 407-16 Medizinische Fakultät der Ludwig Maximilians-Universität, München, Bayern
- 407-21 Medizinische Fakultät der Universität Hamburg, Hamburg, Hamburg
- 407-23 Medizinische Fakultät der Johann-Wolfgang-Goethe-Universität, Frankfurt-Am-Main, Hessen
- 407-33 Medizinische Fakultät der Freien Universität Berlin, Berlin

**409 Germany West**

- 409-05 Medizinische Fakultät Albert-Ludwigs-Universität Freiberg IM Breisgau
- 409-33 Medizinische Fakultät Freien Universität, Berlin, Berlin (407-33 Prior to 1-1-71)

**418 Greece**

- 418-02 Faculty of Medicine University of Thessaloniki, Thessaloniki

**451 Honduras**

- 451-01 Facultad de Medicina y Cirugía de la Universidad Nacional Autónoma de Honduras, Tegucigalpa

**473 Hungary**

- 473-01 Orvosi Fakultás Tudományegyetem, Budapest

**495 India (Goa)**

- 495-01 University of Bombay, Affiliated Medical Colleges are:
  - a. Grant Medical College Bombay University, Bombay, Maharashtra
  - b. Seth Gorhandas Sunderdas Medical College Bombay University, Bombay, Maharashtra
- 495-04 Madras Medical College Madras University, Madras, Madras
- 495-08 Christian Medical College Punjab University, Ludhiana, Punjab
- 495-09 St. John's Medical College, Bangalore, Mysore (before June 1966: Government Medical College, Mysore University, Mysore)
- 495-11 Andhra Medical College Andhra University, Visakhapatnam, Andhra
- 495-16 Stanley Medical College Madras University, Madras, Madras
- 495-18 Assam Medical College Gauhati University, Dibrugarh, Assam
- 495-21 Osmania Medical College Osmania University, Hyderabad, Andhra
- 495-23 Medical College Baroda University, Baroda, Gujarat
- 495-27 Christian Medical College, Vellore, Madras
- 495-28 Byramjee Jeejeebhoy Medical College, Poona, Maharashtra
- 495-29 Government Medical College Punjab University, Patiala, Punjab
- 495-30 Sawai Man Singh Medical College Rajasthan University, Jaipur, Rajasthan
- 495-31 Medical College Kerala University, Trivandrum, Kerala
- 495-34 Gajra Rao Medical College Vikram University, Gwalior Madhya Pradesh
- 495-35 Karnatak Medical College Karnatak University, Hubli, Mysore
- 495-36 All-India Institute of Medical Sciences, New Delhi, Delhi
- 495-37 Kasturba Medical College Karnatak University, Manipal, Mysore
- 495-41 G.S.V. Memorial Medical College Lucknow University, Kanpur, Uttar Pradesh
- 495-47 Medical College Jabalpur University, Jabalpur, Madhya Pradesh
- 495-48 M.P. Shah Medical College Gujarat University, Jamnagar, Gujarat
- 495-49 Gandhi Medical College Vikram University, Bhopal, Madhya Pradesh
- 495-50 Guntur Medical College Andhra University, Guntur, Andhra
- 495-54 Rajendra Medical College, Ranchi, Bihar
- 495-55 Sardar Patel Medical College, Bikaner, India
- 495-57 Kakatiya Medical College, Warangal, Andhra Pradesh
- 495-97 Dr. Vaishampayan Memorial Medical College, Shivaji University, Shalapur, Maharashtra

**506 Indonesia**

- 506-02 Faculty of Medicine Airlangga Airlangga University, Surabaya

**517 Iran**

- 507-01 Faculty of Medicine University of Teheran, Teheran

**528 Iraq**

- 528-01 Faculty of Medicine Baghdad University, Baghdad

**539 Ireland**

- 539-01 Faculty of Medicine Queen's University of Belfast, Belfast
- 539-02 National University of Ireland, Constituent Colleges are:
  - a. Faculty of Medicine University College, Dublin
  - b. Faculty of Medicine University College, Cork
  - c. Faculty of Medicine, Galway

**561 Italy**

- 561-15 Facolta di Medicina e Chirurgia dell'Universita di Perugia, Perugia
- 561-19 Facolta di Medicina e Chirurgia dell'Universita di Siena, Siena

**572 Japan**

- 572-11 Tokyo Medical College (Nippon Ikadaigaku) Hongo, Tokyo (Extinct)
- 572-41 Faculty of Medicine Shinshu University, Matsumoto, Nagano

**583 Korea (South)**

- 583-01 Severence Medical College Yonsei University, Seoul
- 583-02 College of Medicine Seoul National University, Seoul
- 583-04 College of Medicine Kyong-Puk National University, Taegu
- 583-06 College of Medicine Chun Nam National University, Kwangiu
- 583-09 College of Medicine Pusan National University, Pusan

**605 Lebanon**

- 605-01 Medical School American University of Beirut, Beirut

**649 Mexico**

- 649-01 Facultad de Medicina de la Universidad Nacional Autonoma de Mexico, Mexico
- 649-02 Facultad de Medicina de la Universidad de Nuevo Leon, Monterrey, Nuevo Leon
- 649-06 Facultad de Medicina de la Universidad Nacional del Sureste, Merida, Yucatan
- 649-14 Facultad de Medicina de la Universidad Autonoma de Guadalajara, Guadalajara Jalisco

**660 Netherlands**

- 660-61 Faculteit der Geneeskunde Universiteit Van Amsterdam, Amsterdam

**671 New Zealand**

- 671-01 Medical School University of Otago, Dunedin

**704 Pakistan**

- 704-01 King Edward Medical College, Lahore, West Pakistan
- 704-02 Dow Medical College, Karechi, Federal Capital Area
- 704-03 Dacca Medical College, Dacca, East Pakistan
- 704-04 Nishtar Medical College, Multan, West Pakistan
- 704-09 Khyber Medical College, Peshawar, North-West Frontier Province
- 704-10 Chittagong Medical College, Chittagong, East Pakistan (160-01 after 7-1-72)

**726 Paraguay**

- 726-01 Facultad de Medicina de la Universidad Nacional de Asuncion, Asuncion

**737 Peru**

- 737-01 Facultad de Medicina de San Fernando de la Universidad Nacional Mayor de San Marcos, Lima
- 737-05 Facultad de Medicina de la Universidad Nacional de San Agustin, Arequipa
- 737-06 Facultad de Medicina "Cayetano Heredia" de la Universidad Peruana de Ciencias Medicas y Biologicas, Lima

**748 Phillipines**

- 748-01 Faculty of Medicine and Surgery University of Santo Tomas, Manila
- 748-02 College of Medicine University of the Phillipines, Manila
- 748-07 College of Medicine Manila Central University, Manila
- 748-08 Institute of Medicine Far Eastern University, Manila
- 748-09 College of Medicine Southwestern University, Cebu City
- 748-10 College of Medicine University of the East, Quezon City
- 748-11 College of Medicine Cebu Institute of Technology, Cebu City



**803 Scotland**

- 803-01 Faculty of Medicine University of Aberdeen, Aberdeen
- 803-03 Faculty of Medicine University of Edinburgh, Edinburgh

**836 South Africa**

- 836-01 Medical School University of the Witwatersrand, Johannesburg

**847 Spain**

- 847-01 Facultad de Medicina de la Universidad de Barcelona, Barcelona
- 847-04 Facultad de Medicina de la Universidad de Madrid, Madrid
- 847-06 Facultad de Medicina de la Universidad de Zaragoza, Zaragoza
- 847-08 Facultad de Medicina de la Universidad de Valencia, Valencia
- 847-10 Facultad de Medicina de la Universidad de Salamanca, Salamanca

**869 Switzerland**

- 869-01 Medizinische Fakultät der Universität Basel, Basel
- 869-02 Medizinische Fakultät der Universität Bern, Bern
- 869-05 Faculté de Médecine de l'Université de Lausanne, Lausanne

**875 Syria**

- 875-01 Faculty of Medicine Damascus University, Damascus

**Taiwan (See Formosa)****891 Thailand**

- 891-01 Faculty of Medicine at Chulalongkorn Hospital University of Medical Sciences, Bangkok
- 891-02 Faculty of Medicine at Sariraj Hospital University of Medical Sciences, Thonburi

**902 Turkey**

- 902-01 Tıp Fakültesi İstanbul Üniversitesi, İstanbul

**913 Union of Soviet Socialist Republics**

- 913-02 Voronezh Medical Institute, Voronezh

**941 Viet-Nam South**

- 941-01 Faculté mixte de Médecine et de Pharmacie Université de Saigon, Saigon

**957 Yugoslavia**

- 957-02 Medicinski Fakultet Univerziteta u Beogradu, Beograd

# Alphabetical Listing

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## A

ABBAS, OILAWER H, WICHITA  
 ABBUEHL, OON R, CHANUTE  
 ABOOU, NABIH I, KANSAS CITY  
 ABEOEEN, MOHAMED Z, OODGE CITY  
 \*ACEVEOD, ALFREDO, WICHITA  
 ADAMS, AUSTIN J, WICHITA  
 ADAMS JR, MARCUS W, HUTCHINSON  
 AGAN, LAWRENCE M, TOPEKA  
 AGUSTIN, CONRAO W, WICHITA  
 AHLSTRAND, RICHARD A, WICHITA  
 AILLON, ALEJANDRO J, HALSTEAD  
 AKERS, GUY I, FORT SCOTT  
 AL-BAGHAL, MOHAMMAO, LEAVENWORTH  
 ALBRIGHT, JEROLO O, HUTCHINSON  
 ALOERSON, THOMAS W, GREAT BENO  
 ALOIS, HENRY, FORT SCOTT  
 ALOIS, WILLIAM, FORT SCOTT  
 ALEXANDER, CHARLES E, KANSAS CITY  
 ALEXANDER, CLYDE W, KANSAS CITY  
 \*ALEXANDER, ELIZABETH, WICHITA  
 ALFONSO, MANUEL, WICHITA  
 ALGIE, WILLIAM H, KANSAS CITY  
 ALLBRITTEN JR, FRANK F, CUNNINGHAM  
 ALLEN, FRANCES A, NEWTON  
 ALLEN, JAMES E, HAYS  
 ALLEN, MARK LYNN, KANSAS CITY,MO  
 ALLEN, MAX S, KANSAS CITY  
 ALLEN, MONTE L, SALINA  
 \*ALLEN, PHILIP M, WICHITA  
 ALLEN, RAY E, LIBERAL  
 ALLEN, TIMOTHY E, KANSAS CITY  
 ALLEN, WILLIAM R, KANSAS CITY  
 ALLEN JR, WILLIAM R, SHAWNEE MISSION  
 ALMONTE, PRISCILLA C, WICHITA  
 ALMONTE, RODOLFO O, WICHITA  
 ALQUIST, VERYL O, BAXTER SPRINGS  
 ALTENBERND, ELVIN CONRAO, SHAWNEE MISSION  
 ALVAREZ, LUIS A, SHAWNEE MISSION  
 ALVAREZ, NORBERTO, ARKANSAS CITY  
 AMARE, MAMMO, KANSAS CITY  
 AMAWI, MOHAMMAO S, OODGE CITY  
 AMBLER, CARL D, PRATT  
 AMENO, ODOUGLAS J, EMPORIA  
 ANDERSON, DALE W, AUGUSTA  
 ANDERSON, DONALD S, WICHITA  
 ANDERSON, EUGENE G, WICHITA  
 ANDERSON, JODY, SALINA  
 ANDERSON, LARRY R, WELLINGTON  
 ANDERSON, LYLE B, GREAT BEND  
 ANDERSON, SEVERT A, CLAY CENTER  
 ANDERSON, WINSTAN L, LAWRENCE  
 ANTRIM, PHILIP JENIFER, ANTHONY  
 ANWAR, M ZIA, LEAVENWORTH  
 APPENFELLER, WILLIAM O, OSAWATOMIE  
 APPELEGATE JR, FRANCIS R, HAYS  
 ARAKAWA, KASUMI, KANSAS CITY  
 ARENAL, ANGELA C, KANSAS CITY  
 ARGO, DONALD A, MARYSVILLE  
 ARGOSINO, RODOLFO, WICHITA  
 ARMBRUSTER, ALBERT A, SHAWNEE MISSION  
 ARMSTRONG, A L, TOPEKA  
 ARMSTRONG, HAROLD J, PITTSBURG  
 ARONOFF, MICHAEL E, CLATHE  
 ARRODONOO, MARIO, TOPEKA  
 ARROYO, ZEFERINO, GARDEN CITY  
 ARTMAN, JOHN C, HAYS  
 ARTZ, TYRONE O, WICHITA  
 ARUNAKUL, PUNYA, TOPEKA  
 ASHER, MARC A, KANSAS CITY  
 ASHLEY, BYRON J, TOPEKA  
 ASHLEY, SAMUEL G, CHANUTE  
 ASHLEY JR, B JOHN, TOPEKA  
 ASHMORE, ARTHUR L, WICHITA  
 ATHON, MERRILL O, SHAWNEE MISSION  
 ATKIN, JOHN D, YATES CENTER  
 ATKINS JR, FLOYD L, KANSAS CITY  
 \*ATLURU, NARAYANA RAO, TOPEKA  
 ATWOOD, M OALE, KINSLEY  
 AUCAR, ALFREDO, ARKANSAS CITY  
 AUCHARO, VIRGIL M, LAWRENCE  
 AUNINS, JOHN, WICHITA  
 AUSTIN, JOHN O, GARDEN CITY  
 AUSTIN, KENNETH O, GECOLAND  
 AVERILL, STUART C, TOPEKA  
 AVES, AGNES, PARSONS  
 AVES, RENATO B, PARSONS  
 AVILA, OSCAR A, DOODGE CITY  
 AYUTHIA, ISSARA I, OODGE CITY

## B

BACANI, OSWALDO, FREEDONIA  
 BACON, ARTHUR H, LAKE WORTH,FL  
 BADEEN II, LOUIS JOHN, SHAWNEE MISSION  
 BAEHR, RALPH H, TOPEKA  
 BAEKE, JOHN O, SHAWNEE MISSION  
 BAILEY, COLIN, HALSTEAD  
 BAILEY, DONALD C, WICHITA  
 BAILEY, WILLIAM A, LAWRENCE  
 BAILIE, MICHAEL DAVID, KANSAS CITY  
 BAIR, ALBERT E, INDEPENDENCE  
 BAIR, GLENN O, TOPEKA  
 BAKER, FREDERICK C, TOPEKA  
 BAKER, HENRY K, CHANUTE

BAKER, PHILLIP L, TOPEKA  
 BAKER, RAY O, TOPEKA  
 BAKER, RICHARD B, MANHATTAN  
 BAKER, WILLIAM STEVEN, SHAWNEE MISSION  
 BALANOFF, ARNOLD Z, SHAWNEE MISSION  
 BALL, RALPH G, MANHATTAN  
 BANKS, GILBERT, COFFEYVILLE  
 BANKS, ROBERT E, PAOLA  
 BANSAL, SATISH C, SHAWNEE MISSION  
 BAPTIST, JEREMY E, SHAWNEE MISSION  
 BARABAN, MARC R, TOPEKA  
 BARBA, ESTRELLA G, WICHITA  
 BARBA JR MO, ANTONIO P, WICHITA  
 BARBER, JAMES L, AUGUSTA  
 BARBERA, PORTER E, INDEPENDENCE  
 BARE, LAWRENCE E, COLCRADO SPRING,CO  
 BARE II, CHARLES E, SHAWNEE MISSION  
 BARKER, BENJAMIN W, WICHITA  
 BARKER, ELIZABETH B, SHAWNEE MISSION  
 BARKER, JAMES BERTON, SHAWNEE MISSION  
 BARKER, PATRICK N, PRATT  
 BARKER, ROYAL A, COUNCIL GROVE  
 BARKER, STEVEN E, MINNEAPOLIS  
 BARNARD III, JAMES A, GARDEN CITY  
 BARNES, MARIAN, LANCASTER,CA  
 BARNETT, ARNOLD M, WICHITA  
 BARNETT JR, THOMAS E, SHAWNEE MISSION  
 BARNHART, RONALD J, SHAWNEE MISSION  
 BARNHILL, C ALTON, TOPEKA  
 BARNHORST, DONALD A, KANSAS CITY  
 BARR, RICHARD N, SHAWNEE MISSION  
 BARRICK, BRUCE, SHAWNEE MISSION  
 BARRY, DAVID R, LEAVENWORTH  
 \*BARTAL, ELY, WICHITA  
 BARTLETT, WAYNE C, WICHITA  
 \*BASCOM, CHARLES H, RILEY  
 BASCOM, GEORGE S, MANHATTAN  
 BASER, ALI N, BILOXI,MS  
 BASHAM, JAMES J, FORT SCOTT  
 BASS II, ORAL E, WICHITA  
 BASS JR, LEWIS N, KANSAS CITY  
 BASSETT, P MARCUS, HIAWATHA  
 BATES, MICHAEL O, WICHITA  
 BATES, MICHAEL NICHOLS, NEWTON  
 BATNITZKY, SOLOMON, KANSAS CITY  
 BATTISTE, CYNTHIA ELAINE, WICHITA  
 BATTY, LARRY H, SHAWNEE MISSION  
 BATTY, THOMAS V, SHAWNEE MISSION  
 BAUCOM, KARAN YVONNE, TOPEKA  
 BAUCOM-COPELAND, SHARON LAVARNE, TOPEKA  
 BAUDE, EUGENE L ANDRE, TOPEKA  
 BAUER, THOMAS A, HUTCHINSON  
 BAUM, ARNOLD H, OODGE CITY  
 BAUMAN, M LEON, WICHITA  
 BAUMANN, PAUL A, WICHITA  
 BAXTER, W REESE, SALINA  
 BAYLES, HUGH G, FREOCNIA  
 BEACH, RICHARD R, TOPEKA  
 BEAHM, ANOL W, GREAT BENO  
 BEAHM, DONALD E, GREAT BENO  
 BEAHM, EDGAR H, INDEPENDENCE  
 BEAL, RAYMOND J, FREDCNIA  
 BEALE, DAVID A, TOPEKA  
 BEAMON, RICHARD F, SHAWNEE MISSION  
 BEATY, JAMES R, TOPEKA  
 BEAVER, JAMES L, WICHITA  
 BEBAK, DONALD M, WICHITA  
 BECK, JOSEPH O, TOPEKA  
 BECKER, KARL E, WICHITA  
 BECKER, LESLIE E, KANSAS CITY  
 BEOFORO, O R, TOPEKA  
 BEEBE, EOMER, OLATHE  
 BEELMAN, FLOYD C, TOPEKA  
 BEGGS, DAVID F, GARDEN CITY  
 BEHRHORST, CARROLL O, GUATEMALA,  
 BEIDERWELL, PAUL L, BELLEVILLE  
 BELCHER, GEORGE D, COLUMBUS  
 BELL, OELORIS W, SHAWNEE MISSION  
 BELL, MARGARET E, APO NEW YORK,NY  
 BELLAR, RALPH E, HARPER  
 BELLER, WILLIS L, TOPEKA  
 BELOT JR, MONTI L, LAWRENCE  
 BELT, ROBERT JULIAN, KANSAS CITY,MO  
 BELZER, EDWARD G, SHAWNEE MISSION  
 BENA, JAMES H, PITTSBURG  
 BENAGE, JOHN F, FORT SCOTT  
 BENNETT, CHARLES A, LEAVENWORTH  
 BENTON, JAY S, NEWTON  
 BENZ, LAURIE J, WICHITA  
 BERGIN, JAMES J, KANSAS CITY  
 BERKEY, VERNON A, PITTSBURG  
 BERKLEY, OON H, ABILENE  
 BERKLEY, NORMAN W, SENECA  
 BERLAND, DAVID I, TOPEKA  
 BERNER, NEAL E, WAKEENEY  
 BERRY, JOHN M, SHAWNEE MISSION  
 BEST, JOHN F, EMPORIA  
 BETHEL, CHANDLER S, WICHITA  
 BETTERTON, DALE C, DOODGE CITY  
 BEUGELSOIJK, HENRY PETER, HALSTEAD  
 BHARGAVA, ASHOK KUMAR, LACROSSE  
 BHARGAVA, BAIKUNTH N, WICHITA  
 BICHLMEIER, FRANKLIN G, KANSAS CITY  
 BIERI, PETER V, LAWRENCE  
 BIERLEIN, KENNETH J, PITTSBURG  
 BIERMANN, HENRY J, WICHITA  
 BIERMANN, WILLIAM J, WICHITA

BIGGS, OENNIS, ABILENE  
 BIGLER, F CALVIN, GARDEN CITY  
 BIGONGIARI, LAWRENCE R, KANSAS CITY  
 BIKALES, VICTOR WILLIAM, SHAWNEE MISSION  
 BILLINGS, THOMAS, MCPHERSON  
 BILLINGSLEY, THAO H, KANSAS CITY  
 \*BINGAMAN, ROBERT W, WICHITA  
 BINYON, KERNIE W, WICHITA  
 BISHOP, FRANCIS E, SHAWNEE MISSION  
 BISHOP, ROONEY LEE, LAWRENCE  
 BITTENBENDER, LEE R, LAWRENCE  
 BITZER, DONALD A, WASHINGTON  
 BLACK, CYRIL V, PRATT  
 BLACK, WILLIAM L, APC NY,NY  
 BLACKBURN, ROBERT W, COUNCIL GROVE  
 BLAIR, T RICHARD, LAWRENCE  
 BLAKE, HENRY S, TOPEKA  
 BLANK, JOHN N, HUTCHINSON  
 BLANKENSHIP, JIM O, OTTAWA  
 BLAYLOCK, HOYT C, WICHITA  
 BLETZ, DONALD B, SHAWNEE MISSION  
 BLISS, JOY V, OLATHE  
 BLOOD, MARY J, WICHITA  
 BLOOM, L THEIL, KINGMAN  
 BLOOM, ROONEY LAMONT, WICHITA  
 \*BLOXHAM, THOMAS J, WICHITA  
 BLUM OO, MICHAEL A, OLATHE  
 BOESE, KENNETH M, MANHATTAN  
 BOGGAN, MICHAEL O, KANSAS CITY  
 BOLES, J MICHAEL, SHAWNEE MISSION  
 BOLES, R OALE, OODGE CITY  
 BOLINGER, ROBERT E, KANSAS CITY  
 BOLLMAN, CHARLES S, JUNCTION CITY  
 BOLT, MICHAEL, PARSONS  
 BOLTON, VICTOR E, KANSAS CITY  
 BONO, ROGER C, WICHITA  
 BONEBRAKE, C RICHARD, TOPEKA  
 BOREL, DAVID, TOPEKA  
 BORGENDALE, LLEWELLYN V, WAMEGO  
 BORKLUND, MAURICE K, PARSONS  
 BORRA, MARIO J, HUTCHINSON  
 BOS, NORMAN C, HUTCHINSON  
 BOSILJEVAC, FRED N, KANSAS CITY  
 BOSILJEVAC, JOSEPH E, EMPORIA  
 BOSSE, FRANK K, ATCHISON  
 BOSWELL, H CRAIG, SHAWNEE MISSION  
 BOUDET, ROBERT A, KANSAS CITY,MO  
 BOWEN, CLOVIS W, TOPEKA  
 BOWEN JR, HARRY J, TOPEKA  
 BOYD, SPENCER H, TOPEKA  
 BOYO, Z REX, WICHITA  
 BOYOEN, MARY S, LAWRENCE  
 BOYER, ROBERT E, KINGMAN  
 BOYLE, HUGH H, WICHITA  
 BRACKETT JR, CHARLES E, KANSAS CITY  
 BRADA, DONALD ROBERT, HUTCHINSON  
 BRADEN, BILL L, WAMEGO  
 BRADLEY, H RUSSELL, EMPORIA  
 BRADLEY, J RODERICK, GREENSBURG  
 BRADY, CHARLES S, ATCHISON  
 BRAKE, DAVID, WICHITA  
 BRANOSTEO, ERNEST C, MCPHERSON  
 BRANSON, VERNON L, LAWRENCE  
 BRAUN, EDWARD W, FORT SCOTT  
 BRAUN, KENNETH, WICHITA  
 BRAUN, ROBERT W, TOPEKA  
 BRAUN, THOMAS G, WICHITA  
 BRAUN, WILLIAM T, PORT ORANGE,FL  
 BRAUN III, WILLIAM T, WICHITA  
 BRAUNSOORF, ROBERT L, TOPEKA  
 BRAVERMAN, DAVID ELLIOTT, SHAWNEE MISSION  
 BRAY, AVIS PAGE, CONCORDIA  
 BRECKBILL, DAVID L, WICHITA  
 BRENNER, WILLIAM R, LARNOE  
 BRETHOUR, LESLIE J, JUNCTION CITY  
 BREWER, MARSHALL A, ULYSSES  
 BRIAN, ROBERT M, EL OORADO  
 BRIBACH, EUGENE J, ATCHISON  
 BRIOGENS, JAMES G, SHAWNEE MISSION  
 BRIDWELL, RUSSELL E, TOPEKA  
 BRILLHART, MAXINE T, KANSAS CITY  
 BRINTON, E HOLMES, WICHITA  
 BRINTON, EDWARD S, WICHITA  
 BRITO, RAUL E, WICHITA  
 BROCHER, TOBIAS, TOPEKA  
 BROCKHOUSE, JOHN P, EMPORIA  
 BROOKER, ROBERT M, SANTA BARBARA,CA  
 BROOKS, WILLIAM HENRY, KANSAS CITY  
 BROSIUS, FRANK C, WICHITA  
 BROTHERS, MARY ELIZABETH, KANSAS CITY,MO  
 BROUCEK, FRANCIS J, SHAWNEE MISSION  
 BROWN, ALEX L, CLEARWATER,FL  
 BROWN, C EVERETT, STAFFORD  
 BROWN, C REIFF, GREAT BENO  
 BROWN, DAVID J, WICHITA  
 BROWN, FRED E, ST MARYS  
 BROWN, JOHN V, KANSAS CITY  
 BROWN, MICHAEL P, WICHITA  
 BROWN, PAUL W, OLATHE  
 BROWN, ROBERT L, WICHITA  
 BROWN, ROBERT M, MANHATTAN  
 BROWN, ROBERT O, ATCHISON  
 BROWN, ROBERT WAYNE, SALINA  
 BROWN, RONALD C, WICHITA  
 BROWN, RONALD L, WICHITA  
 BROWN, VAL J, WICHITA  
 BROWN, WILLIAM R, SHAWNEE MISSION

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BROWN-SANDERS, CAROLINE, LEES SUMMIT, MO  
 BROWNING, WILLIAM H, WICHITA  
 BROWNING, WILLIAM R, MADISON  
 BROWNRIGG, RICHARD L, OODGE CITY  
 BROXTERMAN, STEVEN JOSEPH, SHAWNEE MISSION  
 BRUMMETT, RICHARD R, SALINA  
 BRUNER, STEVEN C, LAWRENCE  
 BRUNER JR, KENNETH W, WICHITA  
 BRUNFELDT, JOAN KRAUS, LAWRENCE  
 BRUNGARDT, BERNARD A, SALINA  
 BRUNING, ROGER MARION, SHAWNEE MISSION  
 BRUND, JAMES W, GARDEN CITY  
 BRYAN, EMERY C, ERIE  
 BRYANT, HOMER L, COFFEYVILLE  
 BUBB, STEPHEN K, KANSAS CITY  
 BUBECK, RALPH W, WICHITA  
 BUCK JR, BEN H, WICHITA  
 BUCK JR, HENRY W, LAWRENCE  
 BUCKMAN, MARTIN SPALDING, SHAWNEE MISSION  
 BUCKRIDAN, LATIF, WICHITA  
 BUOETTI, JOSEPH A, HCLLYWOOD, FL  
 BULA, RALPH E, HAYS  
 BUNKER JR, HERBERT L, JUNCTION CITY  
 BUROICK, BRUCE M, MANHATTAN  
 BUROZIK, EBERHARD G, TOPEKA  
 BURGER, J DALE, HUTCHINSON  
 BURGER, PAUL B, SHAWNEE MISSION  
 BURGER, WILLIAM E, KANSAS CITY  
 BURGESSON, FRANK G, EMPORIA  
 BURGESS, ARTHUR P, OSWEGO  
 BURKE, JAMES J, FORT SCOTT  
 BURKE, JOSEPH V, ATCHISON  
 BURKET JR, GEORGE E, SHAWNEE MISSION  
 BURKMAN, REUBEN J, CHANUTE  
 BURNETT, A DEAN, HALSTEAD  
 BURNEY, WILLIAM W, WICHITA  
 \*BURNEY II, WILLIAM W, WICHITA  
 BURPEE, JAMES F, WICHITA  
 BURTON, JERALD ALBERT, SHAWNEE MISSION  
 BUSCH, ANTHONY B, OODGE CITY  
 BUSTOS, JONAS G, HERINGTON  
 BUTCHER, THOMAS P, EMPORIA  
 BUTH, DENNIS K, WICHITA  
 BUTIN, J WALKER, WICHITA  
 \*BUTLER, OORIS C, WICHITA  
 BUTT, MUHAMMAD, CONCORDIA  
 BYLANDER DO, TERESA I, TOPEKA  
 BYRNE, JAMES PERRY, WICHITA

## C

CABLE, THOMAS M, WINCHESTER, KY  
 CAEOO, CARMELITA O, LIBERAL  
 CAIN, IVAN W, SHAWNEE MISSION  
 CALBECK, JOHN, GARDEN CITY  
 CALDERON, JAIME, KANSAS CITY  
 CALIENOD JR, DANIEL J, WICHITA  
 CALKINS, JOHN W, SHAWNEE MISSION  
 CALKINS, LARRY L, SHAWNEE MISSION  
 CALKINS, W GRAHAM, KANSAS CITY, MO  
 CAMERON, WILLIAM J, KANSAS CITY  
 CAMPBELL, EDWARD G, EMPORIA  
 CAMPBELL, FRANCES S, NEWTON  
 CAMPBELL, GARLAND L, ARKANSAS CITY  
 CAMPBELL, WILLIAM H, COFFEYVILLE  
 CAMPION, WOODROW M, LIBERAL  
 CAPPER, STANLEY L, WICHITA  
 CAROUFF, JAY J, SHAWNEE MISSION  
 CAREY, LARRY J, PARSONS  
 CARLETON, RICHARD C, CLAY CENTER  
 CARLIN, JAMES WILLARD, KANSAS CITY  
 CARLSON, EARL V, HAYS  
 \*CARLSON, TERRY S, WICHITA  
 CARNAHAN, ROBERT L, LAWRENCE  
 CARNEY, MYRTLE S, FT WORTH, TX  
 CARPENTER, PAUL R, KANSAS CITY  
 CARPER, IVAN H, NEWTON  
 CARPER, OWEN E, NEWTON  
 CARRASCO, LENOR C, SHAWNEE MISSION  
 CARREAU, ERNEST P, WICHITA  
 CARRO, F AURELIO, WINFIELD  
 CARTER, MACK A, WICHITA  
 CARVER, LARRY A, TOPEKA  
 CASADY, GILBERT N, HUTCHINSON  
 CASEY, JAMES, HUTCHINSON  
 CASEY, JOHN J, WICHITA  
 CASHMAN JR, MAURICE R, TOPEKA  
 CASTEEL, CHARLES K, SHAWNEE MISSION  
 CATHCART-RAKE, WILLIAM F, SALINA  
 CATHEY, ROBERT H, MANHATTAN  
 CAUBLE, WILBUR G, WICHITA  
 CAUGHRON, MICHAEL ROBERT, SHAWNEE MISSION  
 CAVANAUGH, CLAIR J, GREAT BEND  
 CAVANAUGH, JOHN W, TOPEKA  
 CAVITT, ROBERT F, SHAWNEE MISSION  
 CAWLEY, LEO P, WICHITA  
 CECIL III, JOHN, HAYS  
 CEDERLIND, CRANSTON JAY, SHAWNEE MISSION  
 CENAC, MARK T, LEAVENWORTH  
 CHAFFEE, DEAN C, ABILENE  
 CHAFFIN JR, GOODLOE S, PRATT  
 CHALLIAN, ALEXANDER R, KANSAS CITY  
 CHAMBERLIN JR, CECIL R, TOPEKA  
 CHANEY, ERNIE J, BELLEVILLE  
 CHANG, C H JOSEPH, KANSAS CITY  
 CHANG, FONG CHUNG, TOPEKA  
 CHANG, FREDERIC C, WICHITA  
 CHANG, SHU FANG, SHAWNEE MISSION

CHAPMAN, JAMES H, WICHITA  
 CHAPPUIE, WILLIAM G, INDEPENDENCE  
 CHARO, FREDERICK H, WICHITA  
 CHAVALA, SUDARSAN, ARKANSAS CITY  
 CHEDIAK, ELIAS, LAWRENCE  
 CHEN, JOHN S L, HUTCHINSON  
 CHEN, TAK-MING, TOPEKA  
 CHENOWETH, JOHN R, O.C., OLATHE  
 CHERRY JR, ARTHUR C, TOPEKA  
 CHERVEN, PHILIP L, HUTCHINSON  
 CHEUNG, P W H, TOPEKA  
 CHIN, TOM O, KANSAS CITY  
 CHO, CHENG T, KANSAS CITY  
 CHO, SECHIN, WICHITA  
 CHONKO, ARNOLD M, KANSAS CITY  
 CHOPRA, RAMAN, WICHITA  
 CHOTINONGKOL, ANUPONG, OODGE CITY  
 CHOW, STANLEY Y, FORT SCOTT  
 CHOY, JAMES K L, SUN CITY, AZ  
 CHRISTENSEN, MARION O, KIOWA  
 CHRISTIAN, STANLEY J, SHAWNEE MISSION  
 CHRISTMAN JR, CARL, WICHITA  
 CHRONISTER, BERT, NEODESHA  
 CHUBB, RICHARD M, BAXTER SPRINGS  
 CHUN, CHUNG S, KANSAS CITY  
 CHUNG, JOHN J, SHARON SPRINGS  
 CIFUENTES, RAUL F, WICHITA  
 CISKEY, WILLIAM J, EUREKA  
 CLAASSEN, MILTON A, NEWTON  
 CLARK, COURTNEY, WICHITA  
 CLARK, CRAIG N, TOPEKA  
 CLARK, DAVID H, SALINA  
 CLARK, LAURENCE A, WAMEGO  
 CLARK, DRVILLE R, ST PETERSBURG, FL  
 CLARK, RAY A, LAKE CHAS, LA  
 CLARK, ROBERT THOMAS, GUATEMALA CEN A.  
 CLEAVER, EDGAR M, WICHITA  
 CLENOENIN, ROBERT KEELE, OLATHE  
 CLIFTON, H DAVID, WICHITA  
 \*CLINE, BYRON W, WICHITA  
 CLINTON, DALE L, LAWRENCE  
 CLYDE, HARRIE R, TEMPE, AZ  
 COALE, LLOYD H, KANSAS CITY  
 COBB, LESLIE H, MULVANE  
 COCHRAN, PAUL W, TOPEKA  
 COOY, DOROTHY, HAYS  
 COOY, JOHN, HAYS  
 COE, RICHARD O, SHAWNEE MISSION  
 COFFEY, ROY B, SALINA  
 COHEN, JUSTIN THOMAS, WICHITA  
 COHEN, LOUIS, TOPEKA  
 COHEN, ROBERT A, SHAWNEE MISSION  
 COHEN, SELWYN A, KANSAS CITY  
 COHLMIA, JERRY B, WICHITA  
 COHN, STEVEN G, SHAWNEE MISSION  
 COHNBERG, ROSELLEN E, CEDAR VALE  
 COKELEY, JOHN M, TOPEKA  
 COLOSMITH, DONALD C, EMPORIA  
 COLE, WARO M, WELLINGTON  
 COLEMAN, GARY, ABILENE  
 COLEMAN, THOMAS J, WICHITA  
 COLIP, F MERLYNN, NORTON  
 COLLIER, HAROLD W, WICHITA  
 COLLIER, WILLIAM J, MCPHERSON  
 COLLINS, DEAN T, TOPEKA  
 COLLINS, EDWARD JOSEPH, TOPEKA  
 COLLINS, ELISABETH B, TOPEKA  
 COLLINS, FRANCIS T, TOPEKA  
 COMBS, G RALPH, LEAVENWORTH  
 COMBS, PETER S, LEAVENWORTH  
 CONARD, CLAIR C, OODGE CITY  
 CONCEPCION JR, EUGENIO S, WICHITA  
 CONNELLY, JOHN C, TOPEKA  
 CONNELLY, MAURICE R, SALINA  
 CONNER, BRIAN, SALINA  
 CONRADROY, PETER A, WICHITA  
 CONROY, ROBERT W, TOPEKA  
 COOK, DONALD RAY, WICHITA  
 COOK, G EDWARD, WICHITA  
 COOK, JAMES O, KANSAS CITY  
 COOKE, ALLAN R, KANSAS CITY  
 COOLEY, DAVID A, SHAWNEE MISSION  
 COOLEY, DENNIS M, TOPEKA  
 COOMER, TYLER E, PITTSBURG  
 COOPER, ARTHUR E, NORTON  
 COOPER, JACK R, SHAWNEE MISSION  
 COOPER, KENT J, PITTSBURG  
 COOPER, LEO F, SHAWNEE MISSION  
 COPELAND, GARY A, JUNCTION CITY  
 COPENING, TELL B, IOLA  
 CORBIN, MURRAY O, SHAWNEE MISSION  
 CORDER, S SCOTT, OTTAWA  
 CORONADO, EFRAIN, GARDEN CITY  
 COSSMAN, F PRICE, WICHITA  
 COTTON, ROBERT T, TOPEKA  
 COULTER, HENRY F, SHAWNEE MISSION  
 COULTER, THOMAS B, SHAWNEE MISSION  
 COULTER DO, THAYNE A, CONCORDIA  
 COVERT, THOMAS J, SALINA  
 COWLES, GORDON T, WICHITA  
 COX, ROBERT H, HAYS  
 COX III, IRA L, KANSAS CITY  
 COX JR, IRA, SHAWNEE MISSION  
 COX JR, WALLACE F, KANSAS CITY  
 COYLE, JOHN F, COFFEYVILLE  
 CRAIG, CHARLES C, NEWTON  
 CRAM, ERNEST R, ST FRANCIS  
 CRAM JR, OLE R, LARNED  
 CRAMER, GUY W, PARSONS

CRAMM, RUSSELL E, HAYS  
 CRANE, C HERBERT, MANHATTAN  
 CRANE, DAVID O, WICHITA  
 CRANSTON, STEPHEN D, NEWTON  
 CRARY, JOHN E, TOPEKA  
 CRAWFORD, ROBERT A, HUTCHINSON  
 CROCKETT, CHARLES A, KANSAS CITY  
 CROMMEYER, RICHARD L, KANSAS CITY, MO  
 CROININ, DONALD J, WICHITA  
 CROUCH, CAPT STEVEN W, OOVER, OE  
 CROUCH, WILLIAM H, TOPEKA  
 CROW, ERNEST W, WICHITA  
 CROWLEY, EDWARD X, WICHITA  
 CULP, LOUIS M, KANSAS CITY  
 CULTRON, FRANK T, SALINA  
 CULVER, WARREN T, LAWRENCE  
 CUMMINGS, RICHARD J, WICHITA  
 CURRAN, KEVIN E, SHAWNEE MISSION  
 CURTIS, MIRJANA R, KANSAS CITY

## D

D'SOUZA, BISMARCK C, SALINA  
 DAEHNKE, SIGURO S, WINFIELD  
 DAHL, ASHER W, COLBY  
 DAHL, DENNIS R, LAWRENCE  
 DAILEY, RONALD F, JOHNSON  
 DAIZ, ANTONIO S, PARSONS  
 \*DAKHIL, SHAKER R, WICHITA  
 DALUM, PETER JOSEPH, CLAY CENTER  
 DANIELS, ROBERT M, WICHITA  
 DARR, RICHARD B, KANSAS CITY  
 DAUGHERTY, ROBERT M, MEADE  
 DAVENPORT, S SCOTT, TUSCALOOSA, AL  
 DAVISION, HARRY T, WICHITA  
 DAVIS, CHESTER R, TOPEKA  
 DAVIS, CHRISTOPHER G, KANSAS CITY  
 DAVIS, DAVID H, LARNED  
 DAVIS, DAVID R, EMPORIA  
 DAVIS, GEORGE R, ELLSWORTH  
 DAVIS, PAUL H, WICHITA  
 DAVIS, RICHARD E, SHAWNEE MISSION  
 DAVIS, RONALD B, WICHITA  
 DAVIS JR, JAMES W, KANSAS CITY, MO  
 DAW, HOWARD, WICHITA  
 DAW, HUGHES W, KANSAS CITY  
 DE BAKKER, JAN B, WICHITA  
 DE SMET, ARTHUR AUGUST, KANSAS CITY  
 DE SOUZA, DERRICK J, LEAVENWORTH  
 DECHAIRD, THOMAS, WESTMORELAND  
 DECKER, DONALD O, HALSTEAD  
 DEGNER, JAMES B, GREAT BEND  
 DEITZ, MICHAEL R, KANSAS CITY  
 DEJONG, DAVID C, WICHITA  
 DELGAOD, SERGIO, TOPEKA  
 DELLETT, KENNETH B, EL OORADO  
 DELP, MAHLON H, SHAWNEE MISSION  
 DELPHIA, ROBERT E, OLATHE  
 DEMOSS, ELEANOR P, WICHITA  
 DEMOTT, WAYNE R, KANSAS CITY  
 DENISON, TERRY R, SHAWNEE MISSION  
 DEPENBUSCH, FRANCIS L, HUTCHINSON  
 DEPOE, JOSEPH H, WICHITA  
 DERRINGTON, KENNETH L, SHAWNEE MISSION  
 DESOIGNIE, RAFAEL R, TOPEKA  
 DETAR, GEORGE F, IOLA  
 DIACON, JAMES L, WELLINGTON  
 DIALL, GASTON T, KANSAS CITY  
 DICK, ARTHUR R, KANSAS CITY  
 DICK, WILLIS G, IOLA  
 DICK JR, HENRY J, CHANUTE  
 DICKERSON II, W JOHN, SALINA  
 DICKINSON, CHARLES R, COFFEYVILLE  
 DIEDERICH, DENNIS A, KANSAS CITY  
 DIEHL, ANTONI M, KANSAS CITY, MO  
 DIENER, CLAYTON H, HESSTON  
 DILL, RODNEY, ATWOOD  
 DILLON, WILLIAM L, PARSONS  
 DIXON, RAYMOND W, COFFEYVILLE  
 DLABEL, FRANK A, WILSON  
 DOBRATZ, ROBERT A, BELOIT  
 DOCKHORN, ROBERT J, SHAWNEE MISSION  
 DOHERTY, WILLIAM R, SHAWNEE MISSION  
 DOLAN JR, PHILIP JARVIS, WICHITA  
 DOONAHOE, DOORVAL H, MEADE  
 \*DOONATLE, EDWARD P, WICHITA  
 DOONLEY, JAMES L, WICHITA  
 DOONNELLY, JAMES W, WICHITA  
 DOONNELLY, F MICHAEL, KANSAS CITY  
 DOORNBOS, J FRED, WICHITA  
 DOUBEK, HERBERT D, BELLEVILLE  
 DOUGHERTY, THOMAS M, GARNETT  
 DOUGLAS, JOSEPH MAHLO, LAWRENCE  
 DOWELL, JAMES C, SALINA  
 DOWNING, GREGORY, WICHITA  
 DOZIER, FRED S, HERINGTON  
 DRAEMEL, H RICHARD, SALINA  
 DRAINE, QUIDA O, KANSAS CITY  
 DRAKE, DOUGLAS J, BELOIT  
 DRAKE, RALPH L, WICHITA  
 \*DRAZEK, GEORGE, WICHITA  
 DREHER, HENRY S, SALINA  
 DREVETS, CURTIS C, WICHITA  
 DUCKETT, THOMAS G, HIATWATHA  
 DUCKETT II, THOMAS G, SHAWNEE MISSION  
 DUICK, GREGORY, WICHITA  
 DUJOVNE, CARLOS A, KANSAS CITY  
 DUNAGIN, JACK A, TOPEKA  
 DUNLAP, RICHARD L, LAWRENCE  
 DUNN, DANIEL R, SCOTT CITY

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DUNN, MARTIN J. OLATHE  
 DUNN, MARVIN I. KANSAS CITY  
 DUNSHIE, CARLYLE M. FORT SCOTT  
 DURAND, ANTONIO C. WICHITA  
 DURKEE, WILLIAM R. MANHATTAN  
 DURST JR, ROBERT O. TOPEKA  
 DUYSACK, SAMI. LEAVENWORTH  
 DWORZACK, DAVID L. WICHITA  
 OYCK, ARTHUR H. MCPHERSON  
 OYCK, CORA E. WICHITA  
 OYCK, ERIC LEE, HAYS  
 OYCK, GEORGE, NEWTON  
 OYER, VERNON E. WICHITA  
 OYSART, JACK C. STERLING

## E

EASTES, GARY DEAN, HALSTEAD  
 \*EATON, EDWARD L. TOPEKA  
 EATON, GLEN E. SALINA  
 EATON, LESLIE F. SALINA  
 ECKART, DE MERLE E. HUTCHINSON  
 ECKERT, WILLIAM G. WICHITA  
 EODY, VICTOR M. HAYS  
 EOROZO, M LUZ LUNA, COFFEYVILLE  
 EDWARDS, DAVID J. EMPORIA  
 EDWARDS, MANIS C. WICHITA  
 EGEA, FERNANDO M. KANSAS CITY  
 EGGELHOF, RICHARD H. WICHITA  
 EICHMORN, FRANK O. GARDEN CITY  
 EIOT, DAVID W. OLATHE  
 EIOT, LAURENCE A. OLATHE  
 EIKERMANN, WILLIAM C. SHAWNEE MISSION  
 ELDER, DOUGLAS M. TOPEKA  
 ELOREGE, LOUIS O. RUSSELL  
 ELLEGE, E FRED, GREAT BEND  
 ELLIS, BOBBY J. EMPORIA  
 ELLIS, HARVEY O. WICHITA  
 ELLIS, STEPHEN S. COFFEYVILLE  
 ELLISON, PAUL O. SALINA  
 ELNEN, WALTER T. WICHITA  
 EMERY, FRANK A. WICHITA  
 EMMOT, WILLIAM W. INDEPENDENCE  
 EMPSON, CHARLES L. INDEPENDENCE  
 ENBERG, ROBERT, HAYS  
 ENOERS, WRAY, SHAWNEE MISSION  
 ENNS, EUGENE K. NEWTON  
 ENNS, JAMES H. NEWTON  
 \*ENOCH, ROLLAND, WICHITA  
 ENRIQUEZ JR, ROMAN S. KANSAS CITY  
 ENS, GERHARD GEORGE, HILLSBORO  
 ENS, PETER, HILLSBORO  
 ENSEY, T CRANFORD, MARION  
 EPLER, JOHN P. WICHITA  
 ERICKSON, CLARENCE W. PITTSBURG  
 ERKEN, RONALD V. WICHITA  
 ESCH, JOHN G. PITTSBURG  
 ESRIG, HAROLD L. O.O., SHAWNEE MISSION  
 ESTES, NORMAN C. INDIANAPOLIS, IN  
 \*ESTRADA, EDMUND C. ANDOVER  
 \*ESTRADA, LINA, ANDOVER  
 ETZENHOUSER III, RUSSELL O. SHAWNEE MISSION  
 EVANS, FARRIS O. WICHITA  
 EVANS, GRANT E. WICHITA  
 \*EVANS, RICHARD W. MILWAUKEE, WI  
 EVANS, ROGER WILLIAMS, WICHITA  
 EVANS, WILLIAM R. GREAT BEND  
 EVANS JR, WILLIAM E. SHAWNEE MISSION  
 EWING, THOMAS O. LARNO  
 EYSTER, ROBERT L. WICHITA

## F

FABIAN, CAROL J. KANSAS CITY  
 FAIRCHILD, JOHN A. MANHATTAN  
 FAIRCHILD, RICHARD S. TOPEKA  
 FALTER, RICHARD T. HUTCHINSON  
 FARHA, GEORGE J. WICHITA  
 FARHA, S JIM, WICHITA  
 FAST, ROBERT E. ATCHISON  
 FAST, W SPENCER, ATCHISON  
 FEAGAN, JERRY, TOPEKA  
 FENDER JR, THOMAS H. WICHITA  
 FENT, LEE S. NEWTON  
 FENTON, ROBERT M. GARDEN CITY  
 FERGUSON, ROBERT LEON, SHAWNEE MISSION  
 FERNANDEZ, HECTOR O. HOISINGTON  
 FERNANDEZ, LUIS A. TOPEKA  
 FERNIE, ROBERT W. HUTCHINSON  
 FERREE, RICHARD ALLAN, MCPHERSON  
 FERRELL, DONALD P. WICHITA  
 FERRIS, BRUCE G. WICHITA  
 FESTOFF, BARRY W. KANSAS CITY, MO  
 FEUILLE JR, EDMOND G. WICHITA  
 FIELO, RICHARD A. TOPEKA  
 FIELOS, GALEN W. SCOTT CITY  
 \*FIELOS, STEPHEN A. WICHITA  
 FIESER, CARL W. GREAT BEND  
 FILLEY, VERNON W. PRATT  
 FILLMAN, ELDON M. TOPEKA  
 FINK, ABRAHAM A. PLANTATION, FL  
 FINLEY, DENNIS R. WICHITA  
 FIRKINS, RICHARD T. DES MOINES, IA  
 FISCHER, REX R. MANHATTAN  
 FISHER, JAMES B. WICHITA  
 \*FISHER, RAY F. WICHITA  
 FISHER, RONALD M. MANHATTAN

FITZGERALD, EDWARD J. WICHITA  
 FITZGERALD, JAMES E. GOOLAND  
 FITZGERALD, THOMAS J. BAXTER SPRINGS  
 FITZIG, SANFORD, WICHITA  
 FITZPATRICK, M ROBERT, KANSAS CITY  
 FLECKENSTEIN, CHARLES S. ONAGA  
 FLEMING, FORNEY W. WICHITA  
 FLESKE, LEONARD T. GREAT BEND  
 FLOERSCH, HUBERT M. KANSAS CITY  
 FLOWERS JR, CLELL B. WICHITA  
 FORD, CHARLES R. WICHITA  
 FORD, FRED L. TOPEKA  
 FORDYCE, NORMAN, SHAWNEE MISSION  
 FORET, JOHN O. KANSAS CITY  
 FORREO JR, WALTER A. HARPER  
 FORSTER JR, LOUIS G. SALINA  
 FORTUNE, CEDRIC B. OLATHE  
 FOSS, DANIEL C. HUTCHINSON  
 FOSTER, CHARLES G. TOPEKA  
 FOSTER, D BERNARD, TOPEKA  
 FOWLER, DENNIS L. WINFIELD  
 FOWLER, ROBERT J. WICHITA  
 FOWLER, WAYNE L. CONCORDIA  
 FOX, DEANNA K. KANSAS CITY  
 FOX, HOWARD A. KANSAS CITY  
 FRANCIS, NORTON L. WICHITA  
 FRANCISCO, CLARENCE L. SHAWNEE MISSION  
 \*FRANCISCO, DAN A. WICHITA  
 FRANCISCO, W DAVID, KANSAS CITY  
 FRANSEN, HERBERT, NEWTON  
 FRANSEN, PAUL H. NEWTON  
 FRANZ, ROBERT G. HILLSBORO  
 FRAZIER, RICHARD L. EMPORIA  
 FREDERICK, M F. HUGOTON  
 FREDERICKSON, DUANE E. LINOSBOG  
 FREEBORN JR, WARREN S. CLOYE  
 FREEMAN, F GILES, PRATT  
 FREEMAN, FRED A. MANHATTAN  
 FREEMAN, MALCOLM C. PITTSBURG  
 FREEMAN, RAYMOND S. SALINA  
 FRIESEN, DALE, LAWRENCE  
 FRIESEN, FLORENCE V. HESSTON  
 FRIESEN, ORLANDO J. BUHLER  
 FRIESEN, STANLEY R. KANSAS CITY  
 FRIGGERI, ROBERT W. GIRARD  
 FRITZ, GEORGE E. WICHITA  
 FRITZMEIER, WILLIAM H. WICHITA  
 \*FROMER, JOEL, WICHITA  
 FROMM, ARTHUR H. WICHITA  
 FROST, ALAN P. TOPEKA  
 FRY, LUTHER L. GARDEN CITY  
 FULLER, JERYL G. SHAWNEE MISSION  
 FULLER, DERYL O. LINOSBOG  
 FULTON, JOHN K. WICHITA  
 FUNK, EDWARD O. LINWOOD  
 FUSILLO, MICHAEL, TOPEKA

## G

GAINES, LARRY STRAWDER, CHARLESTON, SC  
 GALICHA, JOSEPH P. WICHITA  
 GALLEHUGH, KEITH W. SHAWNEE MISSION  
 GALVAN, ALONSO, WICHITA  
 GANDHI, SHANTIKUMAR K. TOPEKA  
 GANN, E LAMONTE, EMPORIA  
 GANS, FREDERICK A. SALINA  
 GANZARAIN, RAMON C. TOPEKA  
 GARCIA, FRANCISCO, SHAWNEE MISSION  
 GARCIA, DOUG C. EMPORIA  
 GARCIA, GUILLERMO O. ODOGE CITY  
 GARDNER, TED M. GARDEN CITY  
 GARDNER, BILLIE L. HARPER  
 GARDNER, GLENN M. SHAWNEE MISSION  
 GARDNER, JAMES O. MANHATTAN  
 GAREY, WILLIAM JOHN, INDEPENDENCE  
 GATENO, JOSEPH, GREAT BEND  
 GAY, JOHN O. TOPEKA  
 GEHRT, EARL B. CHANUTE  
 GEITZ, JAMES M. EMPORIA  
 GELVIN, E RAYMOND, CONCORDIA  
 GENCH, RAYMOND L. CARMEL, CA  
 GENOEL, JOSEPH E. TOPEKA  
 GENILO, AMANCIO C. WICHITA  
 GENILO, CELESTE A. WICHITA  
 GENTRY, KALE C. SHAWNEE MISSION  
 GEORGE, EARL F. WICHITA  
 GEORGE, M DON, WICHITA  
 GERBER, ALLEN O. WICHITA  
 GERBER, HARRY A. LEAVENWORTH  
 \*GERBER, LOWELL IAN, WICHITA  
 GERJARUSAK, PRAPAS, KANSAS CITY  
 GESSLER, DONALD J. WICHITA  
 GETTLER, DEAN T. FORT SCOTT  
 GIAP, HAI PHUC, KNOXVILLE, IA  
 GIBBS, EUGENE, COFFEYVILLE  
 GIESSEL, MICHAEL O. TOPEKA  
 GILBERT, J HOWARD, SENECA  
 GILBERT, ROBERTA M. SHAWNEE MISSION  
 GILBERT II, JOHN H. GARDEN CITY  
 GILHOUSEN, FREDERIC M. KANSAS CITY  
 GILL, GEORGE L. LAMPE, MO  
 GILLEN, BILLY A. SHAWNEE MISSION  
 GILLES, HELEN M. LAWRENCE  
 GILMARTIN, RICHARD C. WICHITA  
 GILMORE, CLARENCE A. KANSAS CITY  
 GIMPLE, KENNETH, TOPEKA  
 GINAVAN, DUANE A. EMPORIA  
 GINSBERG, BRENT W. KANSAS CITY

GIROD, CHARLES I. EL DORADO  
 GIRON JR, LOUIS T. KANSAS CITY  
 GIVNER, DAVID, WICHITA  
 GLAZZARD, CHARLES O. OLATHE  
 GLEASON, JIMMIE A. TOPEKA  
 GLENN, JAMES N. EMPORIA  
 GLENN, LYLE G. PROTECTION  
 GLOVER, RICHARD M. NEWTON  
 GNAU, FREDRIC B. HALSTEAD  
 GOOFREY, KENNETH E. TOPEKA  
 GOOFREY, ROBERT G. KANSAS CITY, MO  
 GOOFREY, WILLIAM A. KANSAS CITY  
 GOOWIN, PHILLIP A. LAWRENCE  
 GOERING, DONALD O. CLOWATER  
 GOERING, EMIL L. TOPEKA  
 GOERING, ROBERT C. WICHITA  
 GOERTZ, KENNETH K. KANSAS CITY  
 GOERTZ, LEO R. KANSAS CITY  
 GOHIL, MAHENORA N. WICHITA  
 GOLOBERG, HERBERT R. WICHITA  
 GOLLERKERT, MOHAN P. SHAWNEE MISSION  
 GOLLIER, ROBERT A. OTTAWA  
 GOLLIER II, ROBERT A. OTTAWA  
 GOMETZ, MODESTO S. PITTSBURG  
 GOMEZ, FRANCISCO, SHAWNEE MISSION  
 GONZALEZ, FRANCISCO, WICHITA  
 GONZALEZ, HIRAM, WICHITA  
 GOOD, JAMES T. FORT SCOTT  
 GOOD, WENDELL LISLE, SHAWNEE MISSION  
 GOODPASTURE, HEWITT C. WICHITA  
 GOODPASTURE, WILLARD C. HUTCHINSON  
 GOODWIN, DONALD W. KANSAS CITY  
 \*GOODWIN, MARY K. ANDALE  
 GOOTEE, JOSEPH E. TOPEKA  
 GOSALIA, ANIL V. SHAWNEE MISSION  
 GOTO, HIROSHI, KANSAS CITY  
 GOULONER, RENE M. WICHITA  
 GOYLE, KRISHAN K. WICHITA  
 GOYLE, VIMAL, WICHITA  
 GRADINGER, BILLENS C. SUN CITY, AZ  
 GRADY, KENNETH L. KANSAS CITY  
 GRAHAM, J MALCOLM, LEAVENWORTH  
 GRAHAM, KENNETH L. LEAVENWORTH  
 GRAHAM, THOMAS W. LEAVENWORTH  
 GRAHAM JR, CHARLES P. TOPEKA  
 GRANTHAM, JARED J. KANSAS CITY  
 GRAUEL, CHARLES W. WICHITA  
 GRAVES, JACK W. WICHITA  
 GRAVES, KATHRYN, HUTCHINSON  
 GRAY, C LUCIEN, WICHITA  
 GRAY, DAVID E. TOPEKA  
 GRAY, H TOM, WICHITA  
 GRAYB, ANTCINE S. TOPEKA  
 GRAYSON, ROY O. ALBUQUERQUE, NM  
 GREEN, LAWRENCE C. ARKANSAS CITY  
 GREENBERG, GEORGE E. ODOGE CITY  
 GREENBERG, MARK, TOPEKA  
 GREENBERGER, N J. KANSAS CITY  
 GREENE, HORACE T. TOPEKA  
 GREENWOOD, EDWARD O. TOPEKA  
 GREENWOOD, JAMES F. ULYSSES  
 GREER, JAMES A. WICHITA  
 GREER, RICHARD H. TOPEKA  
 GRIBBLE, ROBERT N. WICHITA  
 GRIFFITH, FRANK H. SALINA  
 GRILLOT, FLOYD B. WICHITA  
 GRIMALDI, GARY A. FORT SCOTT  
 GRIMES, I ROSS, LIBERAL  
 GRIMES, JAMES T. LYONS  
 GRISOLIA, ANDRES, LEAVENWORTH  
 GRISWOLD, DALE G. NEWTON  
 GROHS, HEINZ K. WICHITA  
 GROSSMAN, HARVEY M. SHAWNEE MISSION  
 GROVE, JOHN A. NEWTON  
 GROWNEY, JOHN T. ATCHISON  
 GRUENDEL, RICHARD A. KANSAS CITY  
 GRUENDEL, VIRGINIA T. KANSAS CITY  
 GRUND, FRANK M. WICHITA  
 GRUNDMEIER, ANNETTE M. SHAWNEE MISSION  
 GRUSHNYS, ARNOLO, WICHITA  
 GSELL, GEORGE F. WICHITA  
 GUERRA, TOMAS H. MARION  
 GUNN, MARVIN R. SALINA  
 GUNTER, CARL C. QUINTER  
 GUTHRIE, RICHARD A. WICHITA  
 GUTOVITZ, ALLEN LOUIS, TOPEKA  
 GUZMAN, MANUEL, SALINA

## H

HA, SANG W. COFFEYVILLE  
 HABASHY, SHAWKY N F. WICHITA  
 HACKER, DAVID CHARLES, SHAWNEE MISSION  
 HACKER, ELAINE MARY, TOPEKA  
 HADLEY, DELMONT C. OTTAWA  
 HAFFNER, WILLIAM N. EL DORADO  
 HAGAN, C THOMAS, WICHITA  
 HAGAN, FRANCIS J. WICHITA  
 HAGGAN, MARGARET E. LAWRENCE  
 HAIGLER, JAMES P. HAYS  
 HAINES, ROBERT A. TOPEKA  
 HALE, RALPH, WICHITA  
 HALL, J ROGER, WICHITA  
 HALL, JERRY O. ANTHONY  
 HALL, WESLEY H. GIRARD  
 HALL DO, KENDAL WM. GARDNER  
 HALL III, THOMAS BRYAN, KANSAS CITY  
 HALLEY, M MARTIN, TOPEKA



HALLING, L WILLIAM, HAYS  
 HALPIN, EDWARD O, WICHITA  
 HALVORSON, HOWARD C, CLATHE  
 HAMILTON, JAMES J, WAKEENEY  
 HAMILTON, NORMAN G, TOPEKA  
 HAMM, ORVAL L, PAKISTAN,  
 HAMMEL, GEORGE W, BELLA VISTA, AR  
 HAMIL, LAWRENCE W, SHAWNEE MISSION  
 HAN, CHAN S, COFFEYVILLE  
 HANCOCK, ALAN C, KANSAS CITY  
 HANDLEY, DENNIS MICHAEL, SHAWNEE MISSION  
 HANSA, HANSA, HAYS  
 HANSON, DAVID C, IOLA  
 HARA, GLENN S, KANSAS CITY  
 HARBIN, GARY LYNN, SALINA  
 HARO, BENJAMIN F, KANSAS CITY, MO  
 HAROIN, CREIGHTON A, KANSAS CITY  
 HARMS, ALBERT C, SHAWNEE MISSION  
 HARMS, EDWIN M, WICHITA  
 HARMS, WILMER A, HALSTEAD  
 HARPSTER, GENE O, SHAWNEE MISSION  
 HARRIS, FRANK H, WICHITA  
 HARRIS, HUBERT L, TOPEKA  
 HARRIS, NORMAN R, SALINA  
 HARRIS, NORVAN D, LIBERAL  
 HARRIS, PATRICIA A, TOPEKA  
 HARRIS JR, CLAIR B, GARNETT  
 HARRISON, A BROOKS, WICHITA  
 HARRISON, HALL E, TOPEKA  
 HARRISON, PAUL BARRY, WICHITA  
 HART, DILLIS L, WICHITA  
 HART, KELLY Z, KANSAS CITY  
 HART, LAWRENCE E, ATCHISON  
 HART JR, PAUL V, KANSAS CITY  
 HARTLEY, FOUNT K, GAINESVILLE, FL  
 \*HARTLEY, JAMES M, WICHITA  
 HARTLEY, ROY WILEY, NORTON  
 HARTMAN, CHARLES R, KANSAS CITY  
 HARTMAN, GERALD V, KANSAS CITY  
 HARTMAN, ROGER L, NORTON  
 HARTOCOLLIS, PETER, TOPEKA  
 HARTONG, WILLIAM A, SHAWNEE MISSION  
 HARVEY, JOHN E, EMPORIA  
 HARVEY, ROSEMARY B, WICHITA  
 HARWOOD, CLAUDE J, GLASCO  
 HASKINS, ROBERT J, CHANUTE  
 \*HASSAN, RIZWAN U, WICHITA  
 HASSELLE III, JAMES E, LAWRENCE  
 HASSETT, GERARD R, CCLBY  
 HASSLER, RANDY D, SALINA  
 HASTINGS, MARY T, SHAWNEE MISSION  
 HATHAWAY, PETER, SHAWNEE MISSION  
 HATTON, DONALD W, LAWRENCE  
 HATTON, LLOYD W, SALINA  
 HATTRUP, RICHARD J, WICHITA  
 HAVENHILL II, MARSHALL A, EMPORIA  
 HAWLEY, RAYMOND G, WICHITA  
 HAYES, KRIS A, WICHITA  
 HAYES, WILLIAM L, WICHITA  
 HAYS, THOMAS H, WICHITA  
 HEASTY, ROBERT G, MANHATTAN  
 HEBBAR, SATYA N, TOPEKA  
 HEDRICK, KENNETH E, HUTCHINSON  
 HENDERSON, CHARLES F, PARSONS  
 HENDRICKSON, JON R, NEWTON  
 HENDRICKSON, KATHRYN D, NEWTON  
 HENNING, CALVIN W, OTTAWA  
 HENNING, CHARLES E, WICHITA  
 HENNING JR, HAROLD JOHN, KANSAS CITY  
 HENRY, JOSEPH E, SHAWNEE MISSION  
 HENSLEY JR, CLINE D, WICHITA  
 HERED, JOHN, WICHITA  
 HERMES, RICHARD L, LAWRENCE  
 HERMRECK, ARLO S, KANSAS CITY  
 HERRERA, JORGE J, TOPEKA  
 \*HERSHBERGER DO, GROVER, WICHITA  
 HERSHORN, SIMON E, WICHITA  
 HERZON, CHARLES D, SHAWNEE MISSION  
 HESSE, FREDERICK J, SALINA  
 HESSER, HERBERT M, SHAWNEE MISSION  
 HIEBERT, ABRAHAM E, WICHITA  
 HIEBERT, DAVID L, LAWRENCE  
 HIEBERT, JOHN B, TOPEKA  
 HIEBERT, PETER E, SHAWNEE MISSION  
 HIESTERMAN, HERMAN W, QUINTER  
 HILDYARD II, VICTOR H, COLBY  
 HILL, JAMES E, BELLA VISTA, AR  
 HILL, JOHN J, COLORADO SPRING, CO  
 HILL, LARY MICHAEL, GREAT BEND  
 HILL, RICHARD H, MEADE  
 HILL, ROBERT N, TOPEKA  
 HILL, RODNEY W, SHAWNEE MISSION  
 \*HILST, WILBUR D, TOPEKA  
 HINSHAW, ALFRED H, WICHITA  
 HINSHAW, CHARLES T, WICHITA  
 HINSHAW, EDGAR D, ARKANSAS CITY  
 HINTHORN, DANIEL R, KANSAS CITY  
 HIRATZKA, TOMIHARU, WICHITA  
 HIRD, WAYNE E, LAWRENCE  
 HIRSCHBERG, J COTTER, TOPEKA  
 HISZCZYNSKYJ, ROMAN, TOPEKA  
 HITCHCOCK, C THOMAS, KANSAS CITY  
 HIZON, RAMON R, WICHITA  
 HOADLEY, WILLIAM D, KANSAS CITY  
 HOBBS, DONALD D, TOPEKA  
 HOBSON, WILBURN W, SHAWNEE MISSION  
 HODES, HERBERT C, SHAWNEE MISSION  
 HODGES, BRUCE E, SHAWNEE MISSION  
 HODGES, GLENN R, KANSAS CITY

HODGES, MERLE A, SALINA  
 HODGSON, DAVID K, WASHINGTON  
 HODGSON, ROBERT B, WICHITA  
 HOOSON, HERVEY R, WICHITA  
 HOFER, DEWAYNE O, CONCORDIA  
 HOFFER, JOHN G, MEDICINE LODGE  
 HOHERZ, DAVID G, TOPEKA  
 HOLCOMB, DONALD G, LCS ANGELES, CA  
 HOLCOMB, WILLIAM M, LIBERAL  
 HOLOCRAFT, JACQUELYNE, KANSAS CITY  
 \*HOLDEN, DAVID M, WICHITA  
 HOLDEN JR, RAYMOND F, WICHITA  
 HOLDERMAN, WALLACE O, HUTCHINSON  
 HOLLADAY, HARMON M, WICHITA  
 HOLLADAY, KENNETH R, EUORA  
 HOLMAN, JON B, SALINA  
 HOLMES, FREDERICK F, KANSAS CITY  
 HOLMES, GRACE E, KANSAS CITY  
 HOLMES, JEO, WICHITA  
 HOLMES, JOHN A, KANSAS CITY  
 HOLSINGER, DONALD M, PITTSBURG  
 HOLT, JOHN M, GREAT BEND  
 HOMPLUM, PACHAREE, PARSONS  
 HOOPER, WILFORD D, HALSTEAD  
 HOOGLSTRATEN, BARTH, KANSAS CITY  
 HOPKINS, WILLIAM O, SHAWNEE MISSION  
 HOPKINS JR, B MORRISON, SCOTT CITY  
 HOPKINS JR, LENLY T, SHAWNEE MISSION  
 HOPPER, CHARLES R, EMPORIA  
 HORBELT, DOUGLAS V, WICHITA  
 HORNE, JAMES B, TOPEKA  
 HORSEMAN, ROBERT F, SHAWNEE MISSION  
 HORTON, BILL GATE, LAWRENCE  
 HORTON, WILLIAM A, KANSAS CITY  
 HOSTETTER, JAMES P, TOPEKA  
 HOSTETTER, PHILIP H, MANHATTAN  
 HOUSHOLDER, DANIEL FAIR, WICHITA  
 HOUSHOLDER, MARTHA S, WICHITA  
 HOUSTON II, LAWRENCE MORLEY, SHAWNEE MISSION  
 HOWARD, DONALD O, WICHITA  
 HOWERTER JR, BERNARD E, COFFEYVILLE  
 HOYLE, WINTHROP E, ESTES PARK, CO  
 HOYT, ARTHUR W, TOPEKA  
 HSU, CHENG H, TOPEKA  
 HSU, SHIN-FU, TOPEKA  
 HUAMAN, ANTONIO M, \*  
 HUANG, GEORGIANA L W, SHAWNEE MISSION  
 HUDSON, JAMES R, CHANUTE  
 HUDSON, ROBERT P, OLATHE  
 HUEBERT, DEAN A, WICHITA  
 HUEBNER, ROBERT STEPHAN, PITTSBURG  
 HUERTER, DAVID F, PITTSBURG  
 HUERTER, QUENTIN C, KANSAS CITY  
 HUGHES, ROBERT WALTER, LAWRENCE  
 HULL, KENNETH L, WICHITA  
 HULTGREN, MYRON K, WICHITA  
 HUME, JOSEPH W, WICHITA  
 HUMMER, LLOYD M, WICHITA  
 HUMPHREY, LOREN JENKINS, SHAWNEE MISSION  
 \*HUND, LARRY R, WICHITA  
 HUNTER, KENNETH R, LEBOW  
 HUNTER JR, JAMES S, MANHATTAN  
 HURWITZ, ARYE, KANSAS CITY  
 HUSEMAN, RICHARD ALLAN, NORTH KANS CITY, MO  
 HUSTEAD, ROBERT F, WICHITA  
 HUSTON, FRANCIS W, WINCHESTER  
 HUSTON, JOSEPH W, TOPEKA  
 HUTCHINSON, DIRK T, WINFIELD  
 HUTCHISON, GLEN C, HAYS  
 HUTTON, FREDERICK A, TOPEKA  
 HWA, EUGENE C, NEWTON  
 \*HYLAND, JOSEPH M, TOPEKA  
 HYLWA, THEODORE M, LONG BEACH, CA  
 HYNES, HARRY E, WICHITA

## I

IBARRA, J LUIS, WICHITA  
 IBARRA, RICHARD C, KANSAS CITY  
 \*IDBEIS, BADR, WICHITA  
 \*ILIFF, R DOUGLAS, TOPEKA  
 INGHAM JR, H LAIRD, LAWRENCE  
 INGRAM, JOHN E, KANSAS CITY  
 INNES, ROBERT C, KANSAS CITY  
 \*IOANNOU, NICHOLAS, WICHITA  
 IRBY, ADDISON C, FORT SCOTT  
 IRBY, PRATT, FORT SCOTT  
 IRWIN, RICHARD L, NEWTON  
 ISAAC, CHARLES A, NEWTON  
 ISAACSON, RICHARD N, TOPEKA  
 ISERN, MERRILL, KANSAS CITY, MO  
 ITURRALDE, GEORGE, SHAWNEE MISSION

## J

JABEL, JUVENAL T, SATANTA  
 JACKMAN, GLENN H, ESTES PARK, CO  
 JACKS, J WARREN, PRATT  
 JACKSON, CHARLES R, WICHITA  
 JACKSON, LINDA H, TOPEKA  
 JACKSON, ROBERT V, SHAWNEE MISSION  
 JACKSON, ROGER PAUL, N KANSAS CITY, MO  
 JACKSON, VICTOR L, ALTAMONT  
 JACKSON JR, DELMAS A, SALINA  
 JACOB, KANNAPALLY L, EL DORADO  
 JACOBS, DAVID S, KANSAS CITY

JACOBS, RAE R, KANSAS CITY  
 JACOBSEN, DWIGHT SKINNER, COLEY  
 JACOBY II, ROBERT E, TOPEKA  
 JAHANIAN, OARYOUSH, KANSAS CITY  
 \*JAMES, DONALD L, WICHITA  
 JAMES, VERNON L, WICHITA  
 JAMES, DONALD R, SHAWNEE MISSION  
 JANSSEN, ERWIN T, TOPEKA  
 JANZEN, HERMAN F, HILLSBORO  
 JARROTT, JOHN B, HUTCHINSON  
 JAYARAM, MARANOAPALLI R, KANSAS CITY  
 JAZAYERLI, NABIL, WICHITA  
 JEFFRIES, RHONDA DETERT, KANSAS CITY  
 JEHAN, SAYEO S, WICHITA  
 JENNEY, CHARLES B, WICHITA  
 JENSEN, THOMAS M, OLATHE  
 JESTER, SHELBY L, WICHITA  
 JEWELL, ROSS L, ST FRANCIS  
 JEWELL, WILLIAM R, KANSAS CITY  
 JIRICKO, MILOS, COFFEYVILLE  
 JOHLER, TERRY HARTWIG, LEAVENWORTH  
 JOHNS JR, LEO E, KANSAS CITY, MO  
 \*JOHNSON, CAROL ANN, WICHITA  
 JOHNSON, EDEEN E, TOPEKA  
 JOHNSON, FREDERICK E, KANSAS CITY, MO  
 \*JOHNSON, GEORGE K, WICHITA  
 JOHNSON, HOWELL D, DODGE CITY  
 JOHNSON, J RICHARD, MCPHERSON  
 JOHNSON, JOHN E, KANSAS CITY  
 JOHNSON, NADINE KAY, SHAWNEE MISSION  
 JOHNSON, PAUL D, LEAVENWORTH  
 JOHNSON, THOMAS E, WICHITA  
 JONES, CHARLES E, SHAWNEE MISSION  
 JONES, EDWARD L, GREAT BEND  
 JONES, FORREST H, COLUMBUS  
 JONES, H IVOR, SHAWNEE MISSION  
 JONES, H PENFIELD, LAWRENCE  
 JONES JR, HERMAN H, KANSAS CITY  
 JOSEPH, BRIAN W, TOPEKA  
 JOSEPH, HOWARD F, LAWRENCE  
 JOSS, CHARLES S, TOPEKA  
 JOUVENAT, NEIL C, SHAWNEE MISSION  
 JOYCE, G BERNARD, TOPEKA  
 JUBELT, HILBERT P, MANHATTAN  
 JUDILLA JR, FRANCISCO, WICHITA  
 JUSTUS, WILLIAM J, PLEASANTON

## K

KADIAN, RAJESH S, SHAWNEE MISSION  
 KADISON, HERBERT I, WICHITA  
 KAGAN, STUART M, SHAWNEE MISSION  
 KALBAC, RICHARD W, GARDEN CITY  
 KALDOR, RICHARD H, MANHATTAN  
 KALIVAS, JAMES T, KANSAS CITY  
 KANE JR, WILLIAM M, HAYS  
 KARDATZKE, E STANLEY, WICHITA  
 KARDATZKE, JON K, WICHITA  
 KASHA, ROBERT L, WICHITA  
 KASHYAP, BANSHI PRASAD, SHAWNEE MISSION  
 KASSEBAUM, GLEN E, EL DORADO  
 KASSEBAUM, KENNETH G, WICHITA  
 KATZ, JEROME B, TOPEKA  
 KAUFMAN, EUGENE E, WICHITA  
 KAUFMAN, LELAND R, WINFIELD  
 KAUFMAN, WILLARD E, MCUNDRIDGE  
 KAUL, ANAND N, WINFIELD  
 KAVEL, KARL K, TOPEKA  
 KAVI, NAGESH G, LEAVENWORTH  
 KEARNS, NORBERT W, TOPEKA  
 KEENE, GEORGE H, WICHITA  
 KEENY, M GARY, WICHITA  
 KEIL, JAMES E, OSAWATOMIE  
 KEITH, ROBERT MARSHALL, EMPORIA  
 KELLER, JAMES P, WICHITA  
 KELLERMAN, RICK, WICHITA  
 KELLING, COLLYER, EMPORIA  
 KELLY, DAN A, TOPEKA  
 KELLY, ROBERT W, WICHITA  
 KEMPTHORNE, CHARLES R, MANHATTAN  
 KENDALL, TOM E, WICHITA  
 KENDRICK, J GILLERAN, WICHITA  
 KENNEDY, GERALD T, WICHITA  
 KENNEDY, HOWARD U, TOPEKA  
 KENNEDY, JAMES A, KANSAS CITY  
 KENNEDY, KENNETH R, SHAWNEE MISSION  
 KEPES, JOHN J, KANSAS CITY  
 KERBY, GERALD R, KANSAS CITY  
 KESTENBAUM, THELDA M, KANSAS CITY  
 KETCHERSIDE JR, WILLIAM J, KANSAS CITY  
 KETCHUM, LYNN D, SHAWNEE MISSION  
 KEYS JR, ROBERT C, TOPEKA  
 KEYS SR, ROBERT C, TOPEKA  
 KHICHA, GYANCHAND J, WICHITA  
 KHOURY, GEORGE H, WICHITA  
 KIFER, C JAMES, HAYS  
 KIM, ALBERT A, CHANUTE  
 KIM, JONG M, KANSAS CITY  
 KIM, PAIK N, WICHITA  
 KIM, YONG W, TOPEKA  
 KIMBALL, RICHARD R, MANKATO  
 KIMBLE, JAMES A, WICHITA  
 KIMURA, CHARLES C, SHAWNEE MISSION  
 KINDLING, PAUL H, TOPEKA  
 KING, CHARLES R, KANSAS CITY  
 KING, WILLIAM T, GREAT BEND  
 KINNAN, L F, CALDWELL

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KINPORTS JR, EDWARD B, KANSAS CITY,MO  
 KIRBY, MERLIN G, GREAT BEND  
 KIRCHNER, FERNAND R, KANSAS CITY  
 KIRK, THOMAS E, MANHATTAN  
 KIRK JR, E DAVID, WICHITA  
 KIRKEGAARD, RODGER S, TOPEKA  
 KISER, JOHN L, WICHITA  
 KISER, WILLARD J, WICHITA  
 KISHORE, ROY N, PARSONS  
 KISHORE, SHEELA, PARSONS  
 KITCHEN, ROBERT R, WICHITA  
 KLASSEN, DANIEL S, NEWTON  
 KLEINHOLZ JR, EMIL JOHN, TOPEKA  
 KLEMMER, HERBERT, TOPEKA  
 KLEMDA JR, MARTIN B, BELOIT  
 KLEWER, VERNON L, NEWTON  
 KLINGLER JR, EUGENE A, MANHATTAN  
 \*KLONTZ, WILLIAM JOSEPH, WICHITA  
 KLOSTERHOFF, BRUCE E, HUTCHINSON  
 \*KLUGMAN, JOSEPH, WICHITA  
 KNAPP, LESLIE E, WICHITA  
 KNAPP, M RDBERT, WICHITA  
 KNAPPENBERGER, ROY C, WICHITA  
 KNECHT, STEPHEN M, EMPORIA  
 KNEIDEL, THOMAS W, WICHITA  
 KNUTH, KENNETH L, INDEPENDENCE  
 KODANAZ, A AYTEKIN, SHAWNEE MISSION  
 KOKSAL, TOM, GARDEN CITY  
 KOONS, JESS W, LIBERAL  
 KOSAR, CLARENCE D, CONCORDIA  
 KOURI, SAMMY H, WICHITA  
 KOVARIK, ERNEST D, TOPEKA  
 KODZIKOWSKI, BEN M, SHAWNEE MISSION  
 KRANTZ, KERMIT E, KANSAS CITY  
 KRAUSE, ROLAND L, WICHITA  
 KREHBIEL, MARK A, SALINA  
 KROLL, HARRY G, TOPEKA  
 KRUCKMEYER, ALAN L, SALINA  
 KRUEGER, HAVEN C, GREAT BEND  
 KRUEGER, KURT ALLEN, SHAWNEE MISSION  
 KRUPKA, JOHN J, WICHITA  
 KRUPKA, MILES ALBERT, BERYN,IL  
 KUBIN, DORIS A, SHAWNEE MISSION  
 KUBINA, GLENN RICHARD, WICHITA  
 KUMAR, SURINDER, NEWTON  
 KURTH, C JOSEPH, WICHITA  
 KURTH, PAUL H, SHAWNEE MISSION  
 KURTH, ROBERT H, SHAWNEE MISSION  
 KUTILEK, FRANK J, WICHITA  
 KWEE, SIDE T, KANSAS CITY  
 KYNER, JOSEPH L, KANSAS CITY

## L

LABHSETWAR, S A, JUNCTION CITY  
 LACEY, STEFFAN R, WICHITA  
 LAFENE, BENJAMIN W, MANHATTAN  
 LAHAM, ALEXANDER J, AUGUSTA  
 LAI, CHI-WAN, KANSAS CITY  
 LAI, JENG Y, WICHITA  
 LAING, ROBERT R, KANSAS CITY  
 LAIRD, DALE D, DLTATHE  
 LAKE, MAX S, SALINA  
 LANCE, RAYMOND W, PITTSBURG  
 LANCE JR, JOHN F, WICHITA  
 LANSKY, LESTER L, KANSAS CITY  
 LANSKY, SHIRLEY B, KANSAS CITY  
 LAPI, RUTH M, SHAWNEE MISSION  
 LARSDN, DELBERT L, HIWATHA  
 LASLEY, DAVID A, SALINA  
 LASLEY, MICHAEL B, HAYS  
 LATIMER, KATHERINE, WICHITA  
 LAUGHLIN, ROBERT L, BAXTER SPRINGS  
 LAURY, DAVID G, OTTAWA  
 LAUVER, MARY ANN, WICHITA  
 LAVA, CHIRUND, PARSONS  
 LAVIN, MARK J, KANSAS CITY  
 LAW, FINDLEY, ELLINWOOD  
 LAWLESS, HAROLD L, BLUE RAPIDS  
 LAWN, CLAUDIA A, WICHITA  
 LAWN, RAYMOND A, WICHITA  
 LAWRY, JAMES VORIS, WINFIELD  
 LAWS, LEWIS R, MARYSVILLE  
 LAWSOON, DWIGHT, TOPEKA  
 LAWTON, MARVIN K, CONCORDIA  
 LAYBURN JR, PAUL C, KANSAS CITY  
 LAZAR, HARRY, WICHITA  
 LEARNED, GEORGE R, LAWRENCE  
 LEATHERS III, HOLLIS K, SHAWNEE MISSION  
 LEE, JAE M, KANSAS CITY  
 LEE, KYO R, KANSAS CITY  
 LEE, R REX, WICHITA  
 LEE, SANG DUG, FT DODGE,IA  
 LEE, SONG DOO, TOPEKA  
 LEE, SONG PING, TOPEKA  
 LEE, YONG U, EL DORADO  
 LEE JR, EDWARD S, WICHITA  
 LEE JR, JAMES G, KANSAS CITY  
 LEFFLER, PAUL B, PITTSBURG  
 LEGASPI JR, PEDRO L, SHAWNEE MISSION  
 LEGER, LEE H, FT MYERS,FL  
 LEGLER, GARY LEE, TOPEKA  
 LEIFER, WILLIAM N, TOPEKA  
 LEIGH, LAWRENCE E, SHAWNEE MISSION  
 LEIKER, JOSEPH, ARKANSAS CITY  
 LEISY, JERALD W, WICHITA  
 LEITCH, DAVID A, GARNETT  
 LEMDINE JR, ALBERT N, KANSAS CITY

LENEVE, ROBERT T, HUGOTON  
 LENSKE JR, FRANCIS X, IDLA  
 LENTZ, WILLIAM R, TOPEKA  
 LED, WILLIAM A, KANSAS CITY  
 LERNER, SCOTT A, SHAWNEE MISSION  
 LESSENDEN, GLENN A, LAWRENCE  
 LESSENDEN JR, C M, TOPEKA  
 LESTER, JOHN BUCKLES, SHAWNEE MISSION  
 LETTNER, HANS T, HUTCHINSON  
 LEVINE, ERROL, KANSAS CITY  
 LEVINE, WILLIAM R, WICHITA  
 LEVY, EDWIN Z, TOPEKA  
 LEWIN, WALTER, SHAWNEE MISSION  
 LEWIS, JAMES E, SHAWNEE MISSION  
 LEWIS JR, H DANIEL, KANSAS CITY,MO  
 LIEBERMAN, BRUCE IRWIN, KANSAS CITY  
 LIES, BARTHEL N, COLWICH  
 LIES, RICHARD B, WICHITA  
 LIESMANN, JEAN ELIZABETH, TOPEKA  
 \*LIGGETT, SCOTT P, WICHITA  
 LIM, CARLO, SEDAN  
 LIN, JAMES T Y, KANSAS CITY  
 LIN, JOE J, WICHITA  
 LINDHOLM, GERALD R, NEWTON  
 LINDLEY, MILTON E, WICHITA  
 LINDSLEY, CAROL B, KANSAS CITY  
 LINDSLEY, HERBERT B, KANSAS CITY  
 LINHARDT, RONALD D, WICHITA  
 LINSRAW, MICHAEL A, KANSAS CITY  
 LIPSEY, JAMES H, SHAWNEE MISSION  
 LISKOW, BARRY IRWIN, KANSAS CITY  
 LITTLE, L GILBERT, WICHITA  
 LIU, CHIEN, KANSAS CITY  
 LIVINGSTON, CHARLES E, SALINA  
 LLOYD, HARVEY L, KANSAS CITY  
 LLOYD, JAMES W, CONCORDIA  
 LOCKHART, JOSEPH G, WICHITA  
 LOEFFLER, JAMES A, WICHITA  
 LOEWEN, HENRY H, WICHITA  
 LOEWEN, PETER S, HILLSBORO  
 LOEWEN, WILLIAM C, WICHITA  
 LODGREEN, VICTOR J, OTTAWA  
 LOGAN, GEOFFREY G, WICHITA  
 LOGANBILL, VARDEN J, MOUNDRIIDGE  
 LOHMEYER, KENNETH L, EMPORIA  
 LONEY, JOHN M, BELOIT  
 LONG, EDWARD E, HUMBOLDT  
 LONG, JOHN W, TOPEKA  
 LONG, LLOYD D, GODDLAND  
 LONG, ROBERT C, NEWTON  
 LORIN, MICHAEL LEWIS, SHAWNEE MISSION  
 LORTT, CARLOS A, KANSAS CITY  
 LDVELAND, G CHARLES, LAWRENCE  
 LDVETT, PAUL A, WICHITA  
 LDW, HAROLD L, WICHITA  
 LDWE, STANLEY W, MANHATTAN  
 LDWMAN, JAMES T, KANSAS CITY  
 LUEDTKE, WALTER E, EMPORIA  
 LUEGER, JAMES JOHN, SENECA  
 LUEKEN, LUEKE B, WICHITA  
 LUELLEN, THOMAS J, WICHITA  
 LUETJE, CHARLES MARION, KANSAS CITY,MO  
 LUKENS, DAVIO, HUTCHINSON  
 LUKERT, BARBARA P, KANSAS CITY  
 LULO, ANTONIO R, SHAWNEE MISSION  
 LUMB, RAYMOND C, TOPEKA  
 LUNGSTRUM, JACK E, SALINA  
 LUZZATI, ENZO F, WICHITA  
 LYNCH, JOHN A, TOPEKA  
 LYNCH, SEAN R, KANSAS CITY  
 LYDONS JR, FRANK C, MANHATTAN

## M

MAC KILLOP JR, DANIEL, WINFIELD  
 MACARTHUR, RICHARD IAN, KANSAS CITY  
 MACE, RONALD D, JUNCTION CITY  
 MACY, NORMAN E, SALINA  
 MACY, TED L, SALINA  
 MADISON, WILLARD A, NEWTONVILLE  
 MADISON JR, WARD N, WICHITA  
 MADSEN, GLENN L, LAWRENCE  
 MAGIDSON, ELLIOT ARTHUR, WICHITA  
 MAGRINA, JAVIER F, KANSAS CITY  
 MAILMAN, GERSHON, WICHITA  
 \*MALIK, MUMTAZ ILAHI, WICHITA  
 MALLDREY, JOHN A, SHAWNEE MISSION  
 MALDNE, EUGENE M, HALSTEAD  
 MANAHAN, G EUGENE, LAWRENCE  
 MANGOLD, JOEL VOYCE, KANSAS CITY  
 MANI, MANI M, KANSAS CITY  
 MANLEY, JOSEPH W, SHAWNEE MISSION  
 MANNING, ROBERT T, WICHITA  
 MANSFIELD, CARL M, KANSAS CITY  
 MANSOUR, BADIE S, WICHITA  
 MANTZ, FRANK A, SHAWNEE MISSION  
 MARCHBANKS, DONALD L, SALINA  
 MARSH, CONNIE M, HALSTEAD  
 MARSH, HENRY O, WICHITA  
 MARSHALL, B M, TOPEKA  
 MARSHALL, GEORGE D, COLBY  
 MARSHALL, GEORGE W, SALINA  
 MARSHALL, RONALD L, MANHATTAN  
 MARTIN, DANIEL C, MANHATTAN  
 MARTIN, EARL A, PARSONS  
 MARTIN, JOSEPH P, KANSAS CITY  
 MARTIN, NORMAN L, KANSAS CITY  
 MARTIN, OLIVER L, SALINA

MARTIN, RONALD C, HILL CITY  
 MARTIN, WILLIAM O, TOPEKA  
 MARTIN JR, GLEN E, WICHITA  
 MARTINEZ, JOHN D, KANSAS CITY  
 MARVIN, NORMAN G, SHAWNEE MISSION  
 MARYMONT JR, JESSE H, WICHITA  
 MASER, GEORGE R, SHAWNEE MISSION  
 \*MASSEY, ANDREW D, WICHITA  
 MASTERS, FRANCIS W, KANSAS CITY  
 MASTERSON, BYRON J, KANSAS CITY  
 MASTERSON, MELVIN LEROY, TROY  
 MASTID JR, GEORGE J, WICHITA  
 MATASSARIN, BENJAMIN M, WICHITA  
 MATASSARIN, FREDERICK W, WICHITA  
 MATHEWS, ROBERT C, DLTATHE  
 MATHEWS, ROBERT MAJOR, SHAWNEE MISSION  
 MATHEWSON, HUGH S, KANSAS CITY  
 MATHIS, JERRY L, SALINA  
 MATTHEW, WILLIAM L, OLATHE  
 MATTICK, IRVIN H, HAYS  
 MATTIOLI, LEONE, KANSAS CITY  
 MAU, WALTER, TOPEKA  
 MAUCK, HAROLD C, STOCKTON  
 MAWDSLEY, MICHAEL W, WICHITA  
 MAXFIELD, RUSSELL J, GARDEN CITY  
 MAXWELL, GORDON E, SALINA  
 MAXWELL, ROBERT A, SHAWNEE MISSION  
 MAY, KENNETH L, BANNER SPRINGS  
 MC GEENEY, TERRY L, SENECA  
 MC NICKLE, GEORGE ANDREW, ASHLAND  
 MC PHEE, MARK S, KANSAS CITY  
 MCALINNEY, PATRICK G, KANSAS CITY,MO  
 MCALLASTER, WENDALE E, GREAT BEND  
 MCCANN, PATRICK E, FORT SCOTT  
 MCCANN, WILLIAM E, DLTATHE  
 MCCARTER, DUANE K, TOPEKA  
 MCCARTHY, ROBERT P, KANSAS CITY  
 MCCAGUEY, HUGH W, SHAWNEE MISSION  
 MCCLEANAHAN, WARD A, WICHITA  
 MCCLELLAN, ERNEST L, WICHITA  
 MCCLELLAN, JOHN W, TOPEKA  
 MCCLURE, JAMES A, TOPEKA  
 MCCOLLUM, MARY B, LEAVENWORTH  
 MCCOLLUM, WILLIAM B, LEAVENWORTH  
 MCCOMAS JR, MARMAUKE D, CONCORDIA  
 MCCOY, CHARLES P, WICHITA  
 MCCOY, CHARLES T, HUTCHINSON  
 MCCOY, RONALD, DODGE CITY  
 MCCRAE, SPENCER C, SALINA  
 MCCULLOUGH, ROBERT C, GODDLAND  
 MCEACHEN, WILLIAM H, SHAWNEE MISSION  
 MCELHINNEY, CHARLES F, DODGE CITY  
 MCELROY, MICHAEL B, SHAWNEE MISSION  
 MCELROY, ROBERT T, TOPEKA  
 MCELROY, WILBUR J, TOPEKA  
 MCGINNIS, MICHAEL J, DODGE CITY  
 MCGUIRE, WILLIAM F, WICHITA  
 MCGURK, THOMAS E, SHAWNEE MISSION  
 MCKEE, LEO F, COTTONWOOD FALLS  
 MCKEE, RICHARD S, LEAVENWORTH  
 MCKENNA, MICHAEL J, FORT SCOTT  
 MCKERRACHER, ROBERT D, DERBY  
 MCKIN, W LYNN, KINSLEY  
 MCKNIGHT, DAVID E, MANHATTAN  
 MCKNIGHT, ELLIS B, ALMA  
 MCCLAIN, KENNETH, RANSCM  
 MCMAHON, MERRI M, WICHITA  
 McMULLEN, JOSEPH E, HUTCHINSON  
 MCNEIL, ELBERT D, MANHATTAN  
 MCREYNOLDS, CHARLES R, WICHITA  
 MCVAY, R BRUCE, CLAY CENTER  
 MCWHARTER, LOTTIE B, SHAWNEE MISSION  
 MEADDS, DONALD C, WICHITA  
 MEHUST, WINSTON K, KANSAS CITY  
 MECH, ARNOLD W, TOPEKA  
 MEDHAT, MOHAMED A, KANSAS CITY  
 MEDINA, ANIBAL, HAYS  
 MEE, ADRIAN W, DLTATHE  
 MEEK, GEORGE C, ARKANSAS CITY  
 MEEK, PALMER F, MANHATTAN  
 MEEK JR, JOSEPH C, KANSAS CITY  
 MEERER II, BRUCE P, WICHITA  
 MEGIBOW, ALAN D, TOPEKA  
 MEHAFFY, ORVILLE A, BAXTER SPRINGS  
 MEHRHOF, EDWARD G, TOPEKA  
 MEIDINGER, RAY, HIWATHA  
 MEIDINGER, RICHARD, TOPEKA  
 MELEAN, JAIME, WICHITA  
 MELHORN, J MARK, WICHITA  
 MENAKER, JEROME S, WICHITA  
 MENDIONES, L MARLENE, WICHITA  
 MENDIONES, RUPERT D, WICHITA  
 MENDLICK, R MICHAEL, CLATHE  
 MENEHAN, H JAMES, WICHITA  
 MENEZ, CESAR V, SHAWNEE MISSION  
 MENKING, F W MANFRED, WICHITA  
 MENKING, SUSAN MARGARET, WICHITA  
 MENNINGER, KARL A, TOPEKA  
 MENNINGER, ROBERT G, TOPEKA  
 MENNINGER, ROY W, TOPEKA  
 MENNINGER, W WALTER, TOPEKA  
 MERCADER, MARIO S, WICHITA  
 MEREDITH, W TOM, WICHITA  
 MERKEL, EARL D, RUSSELL  
 MERRITT, JOE P, WICHITA  
 MERRITT, W HENRY, LEAVENWORTH  
 MERSHON, JAMES C, WICHITA  
 MESINA, ROLANDO R, KANSAS CITY  
 MEULBROEK, HARVEY J, WICHITA

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MEYER, WARREN E. WICHITA  
MEYERS, STEPHEN, GARDEN CITY  
MICHELBAUGH, ALBERT P. WICHITA  
MIGUELINO, OLIVER M. EMPORIA  
MIH, ALEXANDER, CHANUTE  
MILFELD, DOUGLAS J. WICHITA  
MILLER, ABRAHAM H. MANHATTAN  
MILLER, CHARLES H. PARSONS  
MILLER, CLYDE W. WICHITA  
\*MILLER, DAVID PATERSON, WICHITA  
MILLER, DEAN M. PARSONS  
MILLER, DON E. WICHITA  
MILLER, EARL E. PITTSBURG  
MILLER, ELOEN V. SALINA  
MILLER, FRANKLIN R. WINFIELD  
MILLER, FREEMAN LANCE, SHAWNEE MISSION  
MILLER, HERBERT C. NORFORD, CT  
MILLER, LAWRENCE H. OERBY  
MILLER, MONTE B. ANDREWS AFB, MO  
MILLER, PHILIP A. WICHITA  
MILLER, ROBERT E. GARDEN CITY  
MILLER, STEPHEN FRANCIS, PARSONS  
MILLIGAN, DONALD B. OLATHE  
MILLS, CHARLES D. WICHITA  
MILLS, GEORGE QUINTON, WICHITA  
MILLS, VERNON A. LEAVENWORTH  
MILLS JR, PHILIP E. TOPEKA  
MIMOSO, JOSE J. DOOG CITY  
MINER JR, PHILIP B. KANSAS CITY  
MINICK, CHARLES V. JUNCTION CITY  
\*MINNS, GAROLD O. WICHITA  
MIRZA, MEDO, WICHITA  
MISKEW, DON B. W. SHAWNEE MISSION  
MITCHELL, ALEX C. LAWRENCE  
MITCHELL, JOHN C. SALINA  
MITTLEMAN, FREDERICK S. TOPEKA  
MITTS, ERNEST W. BONNER SPRINGS  
MODDRELL, CAROL A. LAWRENCE  
MOOLIN, HERBERT C. TOPEKA  
MOELLER, DONALD D. KANSAS CITY  
MOFFAT, ROBERT E. SHAWNEE MISSION  
MOHLER, JACK M. ABILENE  
MONCKTON, LAURANCE A. LAWRENCE  
MONTGOMERY, LLOYD OAN, HALSTEAD  
MONTGOMERY, THOMAS ALLEN, SABBETHA  
MONTGOMERYSHORT, RUTH G. HALSTEAD  
MOORE, DENNIS F. WICHITA  
MOORE, JAMES E. CONCORDIA  
\*MOORE, JANE A. WICHITA  
MOORE, ROBERT, HOISINGTON  
MOORE, ROBERT F. CANEY  
MOORE, WAYNE V. KANSAS CITY  
MOORHEAD JR, F. ALLEN, NEODESHA  
MORALES, AMALIA D. OSAWATOMIE  
MORALES, OTTO E. OSAWATOMIE  
MORFFI, RAUL R. KANSAS CITY  
MORGAN, DICK A. WICHITA  
MORGAN, JAMES I. WICHITA  
MORGAN, JOHN L. EMPORIA  
MORGAN, NOVA L. HAYSVILLE  
MORGAN II, DAVID LLOYD, OLATHE  
MORGAN III, LOUIS S. WICHITA  
MORONEY, JEAN M. SHAWNEE MISSION  
MORRIS, MERLE O. TOPEKA  
MORRISON, IRA R. ATCHISON  
MORRISON, MICHAEL R. TOPEKA  
MORRISON, RICHARD A. KANSAS CITY  
MORRISON, RICHARD L. WICHITA  
MORROW, THOMAS F. WICHITA  
MORROW JR, J. TARLTON, TOPEKA  
MORTON, JOHN E. HALSTEAD  
MOSELEY, JACK E. WICHITA  
MOSER, ERNEST C. HOLTON  
MOSER, M. ROSS, HOLTON  
MOSER, ROY H. HOLTON  
\*MOSIER, MICHAEL L. MANHATTAN  
MOSIER, STANLEY JAY, WICHITA  
MOSIER, STEVEN J. MANHATTAN  
MOWERY, WILLIAM E. SALINA  
MOWRY, GERALD L. MANHATTAN  
MOYER, HERMAN J. OERBY  
MUEHLBERGER, JAMES J. SHAWNEE MISSION  
MUELLER, ARNOLD V. TOPEKA  
MUELLER, J. KENT, SHAWNEE MISSION  
MUELLER, VERNETTE A. WICHITA  
MULL, JOHN C. HUTCHINSON  
MULLEN SR, CLIFFORD J. KANSAS CITY  
MULLER, SAMUEL B. PITTSBURG  
MULLINIX, JANICE M. WICHITA  
MURFITT, MALCOLM C. LINDSBORG  
MURPHY, BARRY L. WICHITA  
MURPHY, DUANE A. WICHITA  
MURPHY, JAY W. SHAWNEE MISSION  
MURPHY, PAUL M. WICHITA  
MURPHY, THOMAS MEAD, TOPEKA  
MURRAY, KENT B. WICHITA  
MURRAY, W. LEE, SHAWNEE MISSION  
MYERS, AGNES E. WICHITA  
MYERS, JO ANN, TOPEKA  
MYERS, ROBERT W. NEWTON  
MYERS, W. EUGENE, IOLA  
MYERS JR, EARL B. INDEPENDENCE  
MYRICK, MICKEY, HAYS

N

NABOURS, RICHARD D. TOPEKA  
NACHTIGALL, ANDREW, NEWTON

\* Probationary members.

NAIK, GOPAL V. PADLA  
NALDOZA JR, FAUSTINO M. WELLINGTON  
NANCE, JOEL, TOPEKA  
NARCISO, VICENTE D. ABILENE  
NASH, NEWMAN CURTIS, SCOTSDALE, AZ  
NASH, ROBERT A. SHAWNEE MISSION  
NAUER, PAULA LOU, SHAWNEE MISSION  
NAVICKAS, LEONARD A. SHAWNEE MISSION  
NEEL, WILBUR B. HUTCHINSON  
NEFF, JAMES R. KANSAS CITY  
NEIBURGER, JAMES B. SHAWNEE MISSION  
NEIGHBOR, ERNEST G. KANSAS CITY  
NEIGHBOR, ERNEST H. KANSAS CITY  
NEIGHBOR, GAYLORD P. KANSAS CITY  
NEIGHBOR, RALPH M. EMPORIA  
NEIL, ROY NEWTON, HAYS  
NELSON, BRYAN C. SHAWNEE MISSION  
NELSON, GERALD O. WICHITA  
NELSON, JOHN B. SHAWNEE MISSION  
NELSON, PAUL L. CONCORDIA  
NELSON, RICHARD D. LAWRENCE  
NELSON, RUSSELL ALAN, WICHITA  
NELSON, T. EUGENE, FORT SCOTT  
NELSON, WILLIAM PAUL, KANSAS CITY  
NELSON JR, GUST H. WICHITA  
NEMMERS, DAVID J. WINFIELD  
NESMITH, LESLIE W. WICHITA  
NEUENSCHWANDER, JOHN, HOXIE  
NEUENSCHWANDER, JOHN RAND, HOXIE  
NEUER, FREDERICK S. EMPORIA  
NEUSCHAFER, DARREL R. HUTCHINSON  
NEVINS, RICHARD L. LIBERAL  
NEVITT, J. RUSSELL, MORAN  
NEWBY, JAMES P. WICHITA  
NEWCOMB, WARO M. HAYS  
NEWMAN, CLIFFORD B. PITTSBURG  
NEWSOM, F. CARTER, WICHITA  
NEWTON, CHARLES R. VISALIA, CA  
NIBBELINK, LARRY WAYNE, KANSAS CITY  
NICE, G. WILLIAM, TOPEKA  
NICHOLS, RICHARD, COFFEYVILLE  
NICHOLS, ROBERT R. FORT SCOTT  
NICKELL, WAITSTILL B. SALINA  
NICKELL, WENDELL K. SALINA  
NIEDEREE, W. CURTIS, GREAT BEND  
NIEMAN, JOHN L. SHAWNEE MISSION  
NIENSTEDT, JOHN F. SUN CITY, AZ  
NIXON, RICHARD R. CONCORDIA  
NIXON, WILLIAM A. WICHITA  
NOBLE, MARK J. KANSAS CITY  
NOHE, PHILIP C. KANSAS CITY  
NORRIS, CHARLEY W. KANSAS CITY  
NORRIS, ROBERT P. WICHITA  
NORTH, DORIS G. WICHITA  
NORTH, VICTOR, WICHITA  
NORTON, ROBERT K. WICHITA  
NOSTI, JUAN C. SHAWNEE MISSION  
NOTHNAGEL, ARNOLD F. KANSAS CITY  
NOVOTNY, PETER C. TOPEKA  
NOWLIN, NANCY S. WICHITA  
NUNEMAKER, MARION E. HUTCHINSON  
NUNEZ, JULIAN, KANSAS CITY  
NYBERG, FREDRIK F. WICHITA  
NYE, C. ERIK, SHAWNEE MISSION  
NYSTROM, CURTIS A. TOPEKA

O

O'BOYNICK II, PAUL LEONARD, KANSAS CITY  
O'BRYAN, JAMES J. SHAWNEE MISSION  
O'CONNELL, FRANK A. SHAWNEE MISSION  
O'CONNELL, HAROLD F. ELLSWORTH  
O'CONNELL, HARRY E. JUNCTION CITY  
O'CONNELL, RICHARD H. CLAY CENTER  
O'CONNELL JR, LEONARD A. WICHITA  
O'CONNELL SR, LEONARD A. WICHITA  
O'GRAOY, JOSEPH A. GARFIELD, AR  
O'NEIL, ROBERT H. TOPEKA  
O'SHEA, JAMES G. JETHORE  
O'TOOLE, JAMES K. NEWTON  
OBANDON, GUILLERMO, SALINA  
O'BURN, ROBERT L. TOPEKA  
OCHSNER, BRUCE B. WICHITA  
OENHEIMER, BURTRAM J. WICHITA  
ODGERS, RODNEY K. PITTSBURG  
\*ODULIO, PERLITA, WICHITA  
OELSCHLAGER, RONALD O. LAWRENCE  
OHMAN, RICHARD J. DOOG CITY  
OHMART, RICHARD V. OAKLEY  
OKTAWIEC, DANUTA, SHAWNEE MISSION  
OLD, JERRY L. ARKANSAS CITY  
OLOFIELD, RAY W. KANSAS CITY  
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OLSON, CLITUS W. GOODLAND  
OLSON, ERWIN T. NEWTON  
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OPENSHAW, CALVIN R. HUTCHINSON  
ORCHARD, RICHARD A. LAWRENCE  
OSBORN OO, ROBERT M. INDEPENDENCE  
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OSIO, ANTONIO L. WICHITA  
OSOBA, WILLIAM G. WICHITA  
OTHMER, EKKEHARD, KANSAS CITY  
OUANO JR, BIBIANO B. MC PHERSON  
OVERHOLSER, NORMAN M. EL DORADO

OWEN, GARRY O. LAWRENCE  
OWEN, LARUE W. WICHITA  
OWEN, PERE A. WICHITA  
OWENS, RICHARD L. KANSAS CITY, MO  
OWENSBY, L. C. CONCORDIA  
OXLER JR, JOHN EDWARD, KANSAS CITY

P

PAGE, JOHN D. PARSONS  
PAGE, WILLIAM L. WICHITA  
PAGE, O. VALE, PLAINVILLE  
PAGE, RUTH, WICHITA  
PAI, RADHA V. PARSONS  
PAI, VARADARAJ S. PARSONS  
PAINE, GEORGE E. HUTCHINSON  
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PALMER, GERALD K. SALINA  
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PANICHABHONGSE, SAMBUNDH, RUSSELL  
PAPP, DEAN, PITTSBURG  
PAPP, ROBERT, TOPEKA  
PARAMESH, JAYA, LARNED  
PARANJOTHI, SUBRAMONIAM P. PARSONS  
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PARMAN, ROBERT D. TOPEKA  
PARRA, MIGUEL O. KANSAS CITY  
PARULKAR, DEEPAK S. TOPEKA  
PASCHINO, ANTONIO R. KANSAS CITY  
PASIMIO, ROGER S. COLUMBUS  
PASTOR, VICTOR HUGO, EMPORIA  
PATAK, RAMACHANDRA V. KANSAS CITY  
PATEL, MAHENDRA N. JUNCTION CITY  
PATEL, VINOD, TOPEKA  
PATINO, EDGAR, TOPEKA  
PATRICK, FRED EDWARD, TOPEKA  
PATTERSON, BRUCE W. WICHITA  
PATTERSON, JOHN R. SHAWNEE MISSION  
PAULS, DANIEL N. PARSONS  
PAY, NORMAN T. WICHITA  
PAYNE, J. RALPH, KANSAS CITY, MO  
PAYNE, ROBERT R. TOPEKA  
PAZELL, JOHN A. KANSAS CITY  
PEARCE, EUGENE W. J. SHAWNEE MISSION  
PEARCE, LUNETA M. SHAWNEE MISSION  
PEASE, GARY L. HUTCHINSON  
PECANA, MANUEL C. KANSAS CITY  
PECKERSON, ARNOLD M. PLAINVILLE  
PEORAZA, HERNANDO, WELLINGTON  
PEES, GERALD B. IOLA  
PEES JR, GERALD BOYD, LAWRENCE  
PEFFLY, ELMER O. CHETOPA  
PENCE, CHARLES D. WICHITA  
PENN, GEORGE M. TOPEKA  
PENNINGTON, KATHERINE, WICHITA  
PENTECOST, RICHARD L. SHAWNEE MISSION  
PEREIRA, WILLY G. ARKANSAS CITY  
PERICO, CARLOS J. SHAWNEE MISSION  
PERIDO, DOMINADOR T. ELKHART  
PERKINS, JACK L. HUTCHINSON  
PERRY JR, LAWRENCE L. KANSAS CITY  
PETELIN, JOSEPH B. KANSAS CITY  
PETERIE, JERRY P. WICHITA  
PETERS, DALE W. CEDAR VALE  
PETERS, GLENN R. KANSAS CITY  
\*PETERS, THOMAS J. WICHITA  
PETERSEN, A. GENE, SHAWNEE MISSION  
PETERSEN, GERALD O. SHAWNEE MISSION  
PETERSON, DEAN L. TOPEKA  
PETERSON, JACK T. MANHATTAN  
PETERSON, ROBERT L. TOPEKA  
PETERSON, VERNON J. TOPEKA  
PETERSON JR, EVAN A. WATHENA  
PETIT, CARL ALFONSO, SHAWNEE MISSION  
PETRIE, SAMUEL C. SHAWNEE MISSION  
PETRIK, EDWIN L. TOPEKA  
PETTEGREW, PAULINE K. SHAWNEE MISSION  
PETTERSON, CECIL E. SYRACUSE  
PETTERSON, DENNIS CRAIG, TOPEKA  
PETTERSON, O'RUTH S. RIDGEVILLE, IN  
PETTIJOHN, WALTER J. RUSSELL  
PFUETZE, BRUCE L. SHAWNEE MISSION  
PFUETZE, KARL O. SHAWNEE MISSION  
PFUETZE, ROBERT E. TOPEKA  
PHAM, TOAI KE, MONTEZUMA  
PHELPS, DAVID WAYNE, FORT SCOTT  
PHILGREEN, DONALD E. OTTAWA  
PHILIPP, JOSEPH THEODORE, MANHATTAN  
PHILLIPS, STEPHEN B. MANHATTAN  
PHILLIPS, WARREN G. SHAWNEE MISSION  
PHIPPS, JACK G. WICHITA  
\*PICKENS, ANDREW T. WICHITA  
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PIERCE, DONALD R. TOPEKA  
PIERCE, GEORGE E. KANSAS CITY  
PIERSON, GEORGE J. OLATHE  
PIERSON, WEIR, MCPHERSON  
PILCHARD, WILLIAM A. SHAWNEE MISSION

PINCDMB, ARTHUR L. DLATHE  
 PINGLETON, WILLIAM WARREN, SHAWNEE MISSION  
 PINSKER, JACOB A. WICHITA  
 PISCHKE, FRANK J. KANSAS CITY  
 PITMAN, WILL D. PRATT  
 PITTS, RONALD L. SHAWNEE MISSION  
 PLOWMAN, CARL W. JEWELL  
 PDGSDN, GEORGE W. PITTSBURG  
 PDKDRNY, CHARLES, SUN CITY, AZ  
 POL, P ALBERT, KANSAS CITY  
 POLING, TERRY L. WICHITA  
 POLLACK, SIMON, WICHITA  
 POLLANO DD, STEPHEN M. WICHITA  
 POLLDOCK, ANTHONY G A. WICHITA  
 POLLY, RICHARD E. TOPEKA  
 POLSON, ROBERT C. GREAT BEND  
 POMMERENKE, FDRREST A. DE SOTO  
 PDDLE, BERNARD T. WICHITA  
 POONAWALA, HUSENI E. KANSAS CITY, MO  
 PORTER, DAVID M. KANSAS CITY  
 PORTER, GARRY L. WICHITA  
 PORTER, ROBERT O. TOPEKA  
 POTTER, ROBERT L. KANSAS CITY  
 POWELL, CAROL W. SHAWNEE MISSION  
 POWELL, KENNETH A. SHAWNEE MISSION  
 POWELL, WILLIAM R. TOPEKA  
 POWELL II, BENSON M. TOPEKA  
 POWERS, G ROBERT, KANSAS CITY  
 POWERS, HARDLD W. SUN CITY, AZ  
 POWERS, K DEAN, WICHITA  
 PRAEGER, MARK A. LAWRENCE  
 PRKALAPAKDRN, QARANEE, NESS CITY  
 PRKALAPAKORN, YANYONG, NESS CITY  
 PRAY, CLAUDIA M. LEAVENWORTH  
 PREHEIM, DELBERT V. NEWTON  
 PREMSINGH, NALINI G. KANSAS CITY  
 PRENTISS, HARDLO, HALSTEAD  
 PRESTDN, DAVID F. KANSAS CITY  
 PRESTDN, RALPH R. TOPEKA  
 PRESTON, RICHARD, GREAT BEND  
 PRETZ, JAMES B. KANSAS CITY  
 PRICE, HILTON I. KANSAS CITY  
 PRICE, JAMES GORDON, KANSAS CITY  
 PRICE, VAUGHAN C. MCPHERSON  
 PRICE JR, LAURANCE W. LAWRENCE  
 PRIETO, LUIS E. WICHITA  
 PROCHAZKA, OTTO F. LIBERAL  
 PROCTOR, ROBERT W. EL DORADO  
 PROKOP, BRAOFORD S. TOPEKA  
 PRONKO, MICHAEL J. SHAWNEE MISSION  
 PROUD, G ONEIL, KANSAS CITY  
 PUGH, OAVIO M. KANSAS CITY  
 PULLMAN, NORMAN K. WICHITA  
 PURINTON, LEW W. WICHITA  
 PUTNAM, LYLE B. WICHITA  
 PYLE, LUCIEN R. TOPEKA

## Q

QAMAR, YUSUF, NEWTON  
 QUACKENBUSH, ROBERT P. ST JOHN  
 QUENZER, RONALD W. PRATT  
 QUINN, CHARLES E. KANSAS CITY  
 QUINONES, ELADIO A. TAMPA, FL

## R

RABE, MELVIN A. LEAVENWORTH  
 RACELA JR, ANTONIO S. SHAWNEE MISSION  
 RADM, SANFORD B. SHAWNEE MISSION  
 RADOVANOV, RAOMILA, NEWTON  
 \*RAGHAVAN, PARULA P. WICHITA  
 \*RAGHAVAN, PRAKASH V. WICHITA  
 RAHMAN, HAFIZ M A. TAMPA, FL  
 RAINBOW-EARHART, KATHRYN A. TOPEKA  
 RAJEWSKI, RICHARD L. HAYS  
 RALSTIN, JAMES H. SHAWNEE MISSION  
 RAMIREZ, AUGUSTO H. PITTSBURG  
 RAMIREZ, IRENE, PITTSBURG  
 RAMSEY, BARTLETT W. TOPEKA  
 RANDALL, GEORGE R. WICHITA  
 RANGLES, MICHAEL J. WICHITA  
 RANSDELL, EDGAR C. TOPEKA  
 RANSOM, JAMES H. TOPEKA  
 RANSOM, KENNETH J. KANSAS CITY  
 RANSOM, WILLARD B. OTTAWA  
 RASSA, REZA P. SALINA  
 RATE, PEGGY S. HUTCHINSON  
 RATE, ROBERT R. HUTCHINSON  
 RATHBUN, EDWIN D. LIBERAL  
 RAUSA JR, FRANCISCO C. WICHITA  
 RAWCLIFFE JR, ROBERT A. WICHITA  
 RAZEK, ZACK A. WICHITA  
 READ, WILLIAM T. COFFEYVILLE  
 READER, GEORGE WHITNEY, WICHITA  
 REALS, WILLIAM J. WICHITA  
 REAZIN, WALTER L. WICHITA  
 RECKLING, FREDERICK W. KANSAS CITY  
 \*REDDI, RAGHUNATH P. WICHITA  
 REDDY, B N. HILL CITY  
 REDDY, EASHWER K. KANSAS CITY  
 REDDY, P JAGANNADHA, HILL CITY  
 REDDY, SATTI S. DOOGIE CITY  
 REDDY, VENUMBABA C. EL DORADO  
 REDFORD, JOHN W B. KANSAS CITY  
 REDING, DOUGLAS J. KANSAS CITY, MO

REEB, RONALD JOSEPH, KANSAS CITY  
 REECE, A THOMEN, GARDNER  
 REECE, RICHARD J. SALINA  
 REED, A J. WICHITA  
 REED, O CRAMER, WICHITA  
 REED, DAVID D. WICHITA  
 REED, JAMES S. APD MIAMI, FL  
 REED, JAMES STEWART, KANSAS CITY  
 REED, RALPH R. LAWRENCE  
 REESE, JACK O. LIBERAL  
 REESE, JOHN L. LAWRENCE  
 REEVES, BRAOFORD F. WICHITA  
 REEVES, CHARLES S. FCRT SCOTT  
 REGIER, HENRY L. KANSAS CITY  
 REGIER, LADONNA M. COLBY  
 \*REIMER, DARLA, HILLSBORO  
 REINHARDT-WULF, TAISSIA L. GAROEN PLAIN  
 REINKING, VICTOR E. TOPEKA  
 REISMAN, MICHAEL ALAN, WICHITA  
 REITH, PAUL, LAWRENCE  
 REITZ, LELAND C. MANHATTAN  
 REITZ, ROGER P. MANHATTAN  
 REIVICH, RONALD S. SHAWNEE MISSION  
 RELIHAN, DONALD A. WICHITA  
 RELIHAN, FRANCIS H. SMITH CENTER  
 REMPEL, JOHN H. WICHITA  
 RENODN, HUMBERTO M. AL AIN  
 REPLOGLE, CHARLES B. GREAT BEND  
 REYES JR, FRANCISCO A. OTTAWA  
 REYMOND, RALPH O. TOPEKA  
 REYNDLOS, JEFFREY C. HAYS  
 REYNDLOS, LLOYD W. HAYS  
 RHOADS, JAMES P. WICHITA  
 RHODEN, CURTIS H. WICHITA  
 RHODES, IVAN E. WICHITA  
 RHODES, JAMES B. KANSAS CITY  
 RHODES, LOWELL M. WICHITA  
 RHODES, MARTIN L. KANSAS CITY  
 RICCI, ROBERT LAWLER, TOPEKA  
 RICE, BERNARD F. SHAWNEE MISSION  
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 RICH, ELOD N. S. NEWTON  
 \*RICH, JOSEPH E. TOPEKA  
 RICHARDS, DALLAS LEE, HAYS  
 RICHARDS, DENNIS O. CLAY CENTER  
 RICHARDSON, J M. TOPEKA  
 RICHARDSON, STEWART F. WICHITA  
 RICHTER, DON G. SHAWNEE MISSION  
 RICK JR, GREGORY G. SHAWNEE MISSION  
 RIDER, JAMES W. ATCHISON  
 RIEDEL, ROBERT H. TOPEKA  
 RIEDERER, ROBERT E. WICHITA  
 RIEGER, ERNEST H. WICHITA  
 RIEKE, FRANK A. SHAWNEE MISSION  
 RIEPE, ROGER E. WICHITA  
 RIGLER, WILSON F. ARMA  
 RILEY, RAY B. KANSAS CITY  
 RIORDAN, HUGH O. WICHITA  
 RISING, JESSE O. KANSAS CITY  
 RIZZA, ROBERT G. HALSTEAD  
 \*RDACH, NEIL E. WICHITA  
 ROBERTS, DANIEL K. WICHITA  
 ROBERTS, LOUIS S. WICHITA  
 ROBERTS, RICHARD S. LAWRENCE  
 ROBERTS, WARREN E. TOPEKA  
 ROBERTSON, EDWARD J. SHAWNEE MISSION  
 ROBERTSON, JOSEPH K. WICHITA  
 ROBINSON, OAVIO B. TOPEKA  
 ROBINSON, OAVIO W. KANSAS CITY  
 ROBINSON, EDGAR L. INDEPENDENCE  
 ROBINSON, G DONALD, WICHITA  
 ROBINSON, JOHN O. KANSAS CITY  
 ROBINSON, JOHN E. WICHITA  
 ROBINSON, RALPH G. KANSAS CITY  
 ROBINSON, ROBERT H. WICHITA  
 ROBISON, JAMES T. SHAWNEE MISSION  
 ROBL, OAVIO A. WICHITA  
 ROCERETO, PAUL V. TOPEKA  
 ROCHANAYON, PIRA, ELLIS  
 RODERICK, JAMES E. SALINA  
 RODRIGUEZ, PAUL L. GAROEN CITY  
 RODRIGUEZ, RAUL G. KANSAS CITY  
 RODRIGUEZ-TOCKER, LILIA, WICHITA  
 ROEDER, ROBERT E. TOPEKA  
 ROJAN, CHAVALIT, PARSONS  
 ROMALIS, BRIAN E. WICHITA  
 ROMEISER, REX S. SALINA  
 ROMDNOO, STEVEN A. OLATHE  
 RODK, LEE E. KANSAS CITY  
 \*ROOS, MAUREEN, WICHITA  
 RORABAUGH, DONALD C. ABILENE  
 ROSE, DONALD L. BELLA VISTA, AR  
 ROSE, GRAHAM C. MANHATTAN  
 ROSE, SHELBY O. WICHITA  
 ROSEN, OAVIO, WICHITA  
 ROSENBERG, STANTON L. SHAWNEE MISSION  
 ROSENBERG, THOMAS F. WICHITA  
 ROSENTHAL, RICHARD, SHAWNEE MISSION  
 ROSENTHAL, STANTON J. KANSAS CITY  
 ROSS, OAVIO K. ARKANSAS CITY  
 ROSS, DENNIS LEE, WICHITA  
 ROSS, JACK L. TOPEKA  
 ROSSITTO, ANTHONY F. SAN FRANCISCO, CA  
 ROTERT, LARRY, TOPEKA  
 ROTH, ALAN E. KANSAS CITY  
 ROTHSTEIN, TERRY B. PARSONS  
 ROWLETT, JACK G. PAOLA  
 ROY, WILLIAM R. TOPEKA  
 RUBIN, HERBERT M. SHAWNEE MISSION

RUBIN JR, BEN, KANSAS CITY  
 RUBLE JR, JAMES L. OVERBROOK  
 RUCKER, CLEMENS, TOPEKA  
 RUEB, ANDREW E. SALINA  
 RUHLEN, JAMES L. DLATHE  
 RUIZ, CARLOS M. GREAT BEND  
 RUMDLD, MERVIN J. SHAWNEE MISSION  
 RUNNELS, JOHN B. TOPEKA  
 RUPP, RICHARD J. TOPEKA  
 RUSSELL, PHILIP W. WICHITA  
 RUTH, WILLIAM E. KANSAS CITY  
 RUTNGAMLUG, LUECHA, HAYS  
 RUZICKA, LAWRENCE J. CONCORDIA  
 RYAN, MICHAEL E. SHAWNEE MISSION  
 RYAN, MICHAEL J. KANSAS CITY  
 RYAN, W SCOTT, EMPORIA  
 RYMER, ROBERT A. SHAWNEE MISSION

## S

SABIN JR, GEORGE M. WICHITA  
 SADIQ, SULEMAN, WICHITA  
 SAFFO, KARL S. SHAWNEE MISSION  
 SALGADO, CARLOS R. WICHITA  
 SAMUEL, CHANDY C. WINFIELD  
 SANCHEZ, ROGELIO, TOPEKA  
 SANBERG, CHRIS B. EL DORADO  
 SANDERS, GLORIA DEANNA, WICHITA  
 SANDERS, J ALAN, LAWRENCE  
 SANDHU, PAUL S. COFFEYVILLE  
 SANTOSCOY, GILBERT S. WICHITA  
 SARGENT, JOSEPH O. TOPEKA  
 SATHYANARAYANA, SARASWATHI, SHAWNEE MISSION  
 SAUL, F WILLIAM, EMPORIA  
 SAUNDERS, MICHAEL E. CONCORDIA  
 SAVIN, VIRGINIA J. KANSAS CITY  
 SAWKAR, LAXMIGAS A. SHAWNEE MISSION  
 SAYLER, JEROME, GREAT BEND  
 SAYLOR, EDWARD H. TOPEKA  
 SAYLOR, LESLIE L. TOPEKA  
 SAYLOR, MARK, TOPEKA  
 SAYLOR, STEPHEN, OTTAWA  
 SCALES, WILLIAM M. BLUE EYE, MO  
 SCAMMAN, W WIKI, TOPEKA  
 SCANLAN, TIMOTHY M. WICHITA  
 SCHAEFER, JOSEPH PETER, SHAWNEE MISSION  
 SCHAEFER, CLARENCE K. SANTA CRUZ, CA  
 SCHEEL, BRADLEY J. HUTCHINSON  
 SCHELLINGER, RICHARD P. EMPORIA  
 SCHERER, ALFRED L. ST JOHN  
 SCHILTZ, FRANCES, WICHITA  
 SCHIMKE, R NEIL, KANSAS CITY  
 SCHLACHTER, ERNEST R. WICHITA  
 SCHLEMMER, ROGER B. PITTSBURG  
 SCHLICHER, JOHN E. WICHITA  
 SCHLOSSER, HARVEY L. TOPEKA  
 SCHLOSSER, PATRICIA T. TOPEKA  
 SCHLOTTERBACK, WILLIAM E. MANKATO  
 SCHLUETER, JOHN J. WICHITA  
 SCHMAUS, LYLE F. IDLA  
 SCHMIOT, HERBERT R. NEWTON  
 SCHMIDT, RAMON WARNER, SALINA  
 SCHNELLE, JOACHIM, WICHITA  
 SCHNOEBELN, RENE E. KINSLEY  
 SCHNOSE, GREGORY O. LAWRENCE  
 SCHOPF, CLIFTON C. WICHITA  
 SCHOTLAND, EDWARD S. KANSAS CITY  
 SCHRAM, PETER CHARLES, TOPEKA  
 SCHREFFER, ROSEMARY, KANSAS CITY  
 SCHROEDER, SYDNEY O. LAWRENCE  
 SCHROLL, JACK C. HUTCHINSON  
 SCHROLL, JOHN T. SHAWNEE MISSION  
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 SCHUKMAN, JAY S. GREAT BEND  
 SCHULTZ, JAMES E. COUNCIL GROVE  
 SCHWARTING, J STEVE, ABILENE  
 SCHWARTZ, EUGENE W. DOOGIE CITY  
 SCHWARTZ, V DEAN, WICHITA  
 SCHWEGLER, RAYMOND A. LAWRENCE  
 SCHWEGLER, RAYMOND A. KANSAS CITY  
 SCHWORM, CURTIS P. KANSAS CITY  
 SCLAR, WILLIAM C. SHAWNEE MISSION  
 SCOTT, ALEX, JUNCTION CITY  
 SCOTT, CHESTER E. SALINA  
 SCOTT, QUANE L. BELLEVILLE  
 SCOTT, VINCENT L. WICHITA  
 SCOTT, WILLIAM H. WICHITA  
 SEAGO, CHARLOTTE L. LIBERAL  
 SEAMAN, LAUREN I. OLATHE  
 SEBREE, STEVEN G. SALINA  
 SEBLEY, JAMES C. HOLTON  
 SEGERTON, JOHN A. TOPEKA  
 SEGIE, FLOYD RONALD, PITTSBURG  
 SEHDEV, JOAN, TOPEKA  
 SEITZ JR, JOSEPH E. ELLSWORTH  
 SEKAVEC, GORDON B. OAKLEY  
 \*SEN SARMA, PRONAB K. WICHITA  
 SERERES, EDGAR P. KANSAS CITY  
 SETTLE JR, RUSSELL O. OLATHE  
 SETTLE SR, RUSSELL O. TOPEKA  
 SEVIER, SAMUEL M. TOPEKA  
 SHAAV, OOROTHY J. SHAWNEE MISSION  
 SHAFER, PRESTON J. WICHITA  
 SHAH, ASHOK H. WINFIELD  
 SHAH, MIAN, LARNED  
 SHAH, MUKHTAR H. WICHITA  
 SHAH, NASREEN, LARNED  
 SHAH, SHARFUDDIN, HALSTEAD  
 SHANKER, STUART G. OLATHE

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SHARMA, ARUN L. PARSCNS  
 SHAW, JAMES W. WICHITA  
 SHAW, JOSEPH L. TOPEKA  
 SHAW, RICHARD C. WICHITA  
 SHAW JR, JAMES W. HUTCHINSDN  
 SHEAFOR, DDOUGLAS, TOPEKA  
 SHEARS, ROBERT N. HUTCHINSON  
 SHEERN, MARK DOUGLAS, ABILENE  
 SHEFFER, KEITH D. OLATHE  
 SHEIKH, MASOOD A. INDEPENDENCE  
 SHELLITO, JOHN G. WICHITA  
 SHELTON, STEPHEN E. TOPEKA  
 SHEPARD, LEROY W. LARNEO  
 SHEPPARD, ROBERT G. SMITH CENTER  
 SHERMAN, ROBERT P. KANSAS CITY  
 SHERWOOD JR, CLARENCE E. TOPEKA  
 \*SHIELD, CHARLES, WICHITA  
 SHIELDS JR, JAMES M. EL DORADO  
 SHIFLET, ALBERT W. WICHITA  
 SHIVEL, DAVID G. GREAT BEND  
 SHOFSTALL, WILLIAM H. SHAWNEE MISSION  
 SHORTES, LOIS E. OSWEGO  
 SHRAOER, DDOYLE A. WICHITA  
 SHUSS, JOHN L. GARDEN CITY  
 SIBALA, JUSTO L. PRATT  
 SIEGEL, ALBERT R. WICHITA  
 SIEMENS, RICHARD A. LYONS  
 SIFERS, EARL C. KANSAS CITY  
 SIFERS, TIMOTHY M. KANSAS CITY  
 SIFFORD, R. LAWRENCE, WICHITA  
 SILER, EUGENE T. HAYS  
 SILLS, CHARLES T. NEWTON  
 SILVERS, ALVIN, KANSAS CITY  
 SIMMONS, ROBERT EARLE, NEWTON  
 SIMMONS, THOMAS H. SHAWNEE MISSION  
 SIMPSDN, J. COLBERT, SALINA  
 SIMPSDN, ROBERT LIMBAUGH, DBERLIN  
 SIMPSDN, TOM C. STERLING  
 SIMPSON, WILLIAM S. TOPEKA  
 SINGER, PHILIP A. KANSAS CITY, MO  
 SINGH, GIRVAR, ARKANSAS CITY  
 SINNING, GARY, HIWATHA  
 SISK, PHILLIP B. TOPEKA  
 SKAER, STANLEY ALLEN, EUREKA  
 SKIBBA, RICHARD W. WICHITA  
 SKIKNE, BARRY S. KANSAS CITY  
 SLEEPER, CAROL A. KANSAS CITY, MO  
 SLDD, MILG G. SALINA  
 SLUTSKY, LAWRENCE JOEL, WICHITA  
 SMITH, ALVIN L. WICHITA  
 SMITH, BOYD E. SALINA  
 SMITH, BRUCE G. ARKANSAS CITY  
 SMITH, DALE C. SHAWNEE MISSION  
 SMITH, DAVID E. SHAWNEE MISSION  
 SMITH, DONALD J. SHAWNEE MISSION  
 SMITH, HAROLD R. SALINA  
 SMITH, JOHN D. LARNEO  
 SMITH, LEO A. TOPEKA  
 SMITH, NEWTON C. ARKANSAS CITY  
 SMITH, PERRY MILTON, GREAT BEND  
 SMITH, STEPHEN D. KANSAS CITY  
 SMITH, STEPHEN J. ARKANSAS CITY  
 SMITH, THOMAS WILLIAM, HUTCHINSDN  
 SMITH, TIMOTHY WM. WICHITA  
 SMITH JR, FLOYD L. COLBY  
 SMITH JR, WILLARD J. WICHITA  
 SNARR, JACK W. TOPEKA  
 SNODDELL, FIRMIN E. SHAWNEE MISSION  
 SNODGRASS, WAYNE R. KANSAS CITY  
 SNODK, ROBERT RUFUS, MCCLOUTH  
 SNOW, DONALD L. LANSING  
 SNOW JR, ARTHUR D. SHAWNEE MISSION  
 SNOWBARGER, MARVIN D. EMPORIA  
 SNYDER, C. JOHN, WINFIELD  
 SNYDER, GREGG M. WICHITA  
 SNYDER, HOWARD E. WINFIELD  
 SNYDER, THOMAS E. SALINA  
 SNYDER JR, RICHARD HENRY, OLATHE  
 SDELDRER, JAMES DLIVER, SHAWNEE MISSION  
 SDHLBERG JR, ROBERT, MCPHERSON  
 SDOLOMDN, HERMAN, WICHITA  
 SDOLTZ, ROBERT A. WICHITA  
 SOMERS, MARVIN M. WICHITA  
 SOUCEK, CHARLES D. KANSAS CITY  
 SPANN, RICHARD W. WICHITA  
 SPAULDING, JOHN S. KANSAS CITY  
 SPEARMAN, JESSE L. TOPEKA  
 SPEER, FREDERIC, SHAWNEE MISSION  
 SPEER, LELAND, KANSAS CITY  
 SPEER, LDUIS N. DTTAWA  
 SPENCER, JOHN HAROLD, FORT SCOTT  
 SPENCER, MILLARD C. TOPEKA  
 SPENCER, WAYNE E. TOPEKA  
 SPIKES, MARION E. GARDEN CITY  
 STADALMAN, RDSS EUGENE, HAYS  
 STAFFORD, ROBERT W. HUTCHINSDN  
 STANLEY, KENNETH E. WICHITA  
 STANLEY, REX C. PADLA  
 STARK, JAMES R. WICHITA  
 STARKEY, JERALD L. RUSSELL  
 STECH, JOSEPH M. ANDALE  
 STECHSCHULTE, DANIEL J. KANSAS CITY  
 \*STECKLEY, RICHARD ALLEN, WICHITA  
 STEEGMANN, A. THEODORE, INDIANAPOLIS, IN  
 STEELE, CLARENCE H. KANSAS CITY  
 STEICHEN, EDWARD F. LENDRA  
 STEIN, JOSEPH M. TOPEKA  
 STEIN, PAUL S. WICHITA  
 STEINBAUER, JEFFREY ROBERT, CLAY CENTER

STEINER, ROBERT M. SHAWNEE MISSION  
 STEINKRUGER, VERLYN WILLIAM, SMITH CENTER  
 STEINZEIG, ALFRED S. SHAWNEE MISSION  
 STEINZEIG, SHERMAN M. KANSAS CITY  
 \*STEMBRIDGE, TRAVIS W. WICHITA  
 STENSAAS, CARL O. HUTCHINSDN  
 STEPHENS, CHARLES, MINNEOLA  
 STEPHENS, RONALD L. KANSAS CITY  
 STEPHENSON, LUCILLE C. ST FRANCIS  
 STEVENS, MILORED J. GARNETT  
 STEVENS, PHILIP L. TONGANOXIE  
 STEVENS, ROBERT L. GARNETT  
 STEVENSON, E. KENT, SHAWNEE MISSION  
 STEWART, JACK T. WICHITA  
 STILLIE, G. DONALD, KANSAS CITY, MO  
 STITES III, HAROLD W. OLATHE  
 STITT, RONALD W. SHAWNEE MISSION  
 STOCK, KARL W. TOPEKA  
 STOCKWELL, MORGAN U. DODGE CITY  
 STOFER, BERT E. PRESCOTT, AZ  
 STOFFER, ROBERT P. HALSTEAD  
 STOKES, ROBERT LEE, KANSAS CITY, MO  
 STOLZ, ELMER G. WICHITA  
 STONE, G. REX, MANHATTAN  
 STONE, GRANT C. ATTICA  
 STDSKOPF, LAWRENCE E. SALINA  
 STOUT, JAMES M. HUTCHINSON  
 STOUT, NILES M. LYNOON  
 STREET, DAVID E. WICHITA  
 STREHLOW, CHESTER H. OTTAWA  
 \*STREIT, JEROME G. WICHITA  
 STRICKLAND, MAURICE VAN, WICHITA  
 STRIEBINGER, CHARLES M. SHAWNEE MISSION  
 STRYKER, TERRY MARGARET, WICHITA  
 STRYKER JR, HENRY B. CONCORDIA  
 STUBBLEFIELD, CHARLES T. KANSAS CITY  
 STUBER, JACK LAWRENCE, SHAWNEE MISSION  
 STUCKEY, CHARLES E. SHAWNEE MISSION  
 STUCKY, DEAN E. MEDICINE LODGE  
 STUMP, HARL G. HAYS  
 SUERO, JESUS T. WICHITA  
 SUFI, ASHRAF M. TOPEKA  
 SUFI, QAISER A. TOPEKA  
 SUGAR, ROBERT L. SHAWNEE MISSION  
 SUITER, DANIEL JAY, PRATT  
 SULLIVAN, CORNELIUS J. P. WICHITA  
 SULLIVAN, LEDNARD L. WICHITA  
 SULLIVAN JR, HENRY B. SHAWNEE MISSION  
 SUMNER, JOYCE R. HUTCHINSON  
 SUMNER, RALPH N. FREONIA  
 SURFACE, GARDNER A. ELLIS  
 SUTTON, RICHARD D. TOPEKA  
 SUTTDN, ROBERT E. INDEPENDENCE  
 SUTTDN JR, RICHARD L. SHAWNEE MISSION  
 SVDBODA, CHARLES R. CHAPMAN  
 \*SVDBODA, WILLIAM B. WICHITA  
 SWAN, MAJOR MARTIN, GREAT BEND  
 SWANN, CLAIR L. RUSSELL  
 SWARTZ, WARREN E. PARSONS  
 SWISHER, WILLIAM C. WICHITA  
 SWDGGER JR, GLENN, TOPEKA

## T

TALLEY, ROBERT L. SHAWNEE MISSION  
 TAMBURINI, MARIO, LEAVENWORTH  
 TANDOC JR, VALENTIN T. NEWTON  
 TANGCHUPONG, CHANTRASIRI, PARSONS  
 TANGCHUPONG, SARDHO, PARSONS  
 TAPPEN, DANIEL L. TOPEKA  
 TARGOWNIK, KARL K. TOPEKA  
 TARNDFF, GERALD M. TOPEKA  
 TARNDWER, WILLIAM, TOPEKA  
 TATPATI, DANIEL A. WICHITA  
 TATPATI, DLGA ADELINA, WICHITA  
 TAYIEM, ABDEL K. ATCHISON  
 \*TAYLOR, BARBARA D. MANHATTAN  
 TAYLOR, E. J. HUTCHINSON  
 TAYLOR, ELMER W. SEDAN  
 TAYLOR, RICHARD J. WICHITA  
 TAYLOR, SARAH A. KANSAS CITY  
 TAYLOR, STEVEN L. WICHITA  
 TAYLOR, THOMAS F. SALINA  
 TAYLOR, THOMAS L. KANSAS CITY  
 TEARE, MAX E. GARDEN CITY  
 TEJAND, NEONILD A. HALSTEAD  
 TEMPERO, STEPHEN J. TOPEKA  
 TEMPLETON, ARCH W. KANSAS CITY  
 TENNY, ROBERT T. SHAWNEE MISSION  
 TETZLAFF, ARCHIBALD C. A. SHAWNEE MISSION  
 THELEN, J. CHRISTINE, WICHITA  
 THERDU, LEDNA F. KANSAS CITY  
 THOMAS, GREGORY MCQUEEN, MCPHERSON  
 THOMAS, JAMES H. KANSAS CITY  
 THOMAS, R. CULLEN, PRATT  
 THOMAS, THOMAS V. KANSAS CITY  
 THOMPSON, DANIEL M. WICHITA  
 THOMPSON, DANNIE M. KANSAS CITY  
 THOMS, NORMAN W. TOPEKA  
 THOMSEN, GARY, SHAWNEE MISSION  
 THORNTON JR, FOXHALL P. CONCORDIA  
 THORPE, FRANCIS A. PRATT  
 THURSTON, DAVID E. TOPEKA  
 TIEMANN, WILLIAM H. MANHATTAN  
 TIETZE, DENNIS D. TOPEKA  
 TIMEN, EDWARD N. WICHITA  
 TIMEN, HENRY N. WICHITA  
 TILLER, GEDRGE R. WICHITA

TILLOTSON, DON R. ULYSSES  
 TILTON, FRANK M. WICHITA  
 TINKER, ROBERT C. WICHITA  
 TINTEROW, MAURICE M. WICHITA  
 TIPPIN JR, ERNEST E. WICHITA  
 TISOALE, TERRANCE C. HUTCHINSON  
 TIVORSK, ARKON, ATCHISON  
 TOALSON, WILLIAM B. SHAWNEE MISSION  
 TOCKER, ALFRED M. WICHITA  
 TOMPKINS, CARL O. NEWTON  
 TONN, GERHART R. WICHITA  
 \*TDSH, FRED E. WICHITA  
 TDTH, JOHN ROY, TOPEKA  
 \*TOTH, NANCY L. TOPEKA  
 \*TDUT, ROBERT C. MANHATTAN  
 TDZER, RICHARD C. TOPEKA  
 TRACY, TERRY A. WICHITA  
 TRAVIS, JOHN W. TOPEKA  
 TREES, CLYDE B. TOPEKA  
 TREES, DONALD P. HOLLYWOOD, CA  
 TREGER, NEWMAN V. TOPEKA  
 TREKELL, WILLIAM V. DODGE CITY  
 TRETBAR, HARVEY A. WICHITA  
 TRETBAR, LAWRENCE L. SHAWNEE MISSION  
 TREWEEKE, MICHAEL W. WICHITA  
 TRIMBLE SR, DAVID P. EMPORIA  
 TROPP DO, ARNOLO L. SHAWNEE MISSION  
 TROTTER, ROGER COURTNEY, MINNEOLA  
 \*TRUDEAU, DAVID L. WICHITA  
 TRUEWORTHY, ROBERT C. KANSAS CITY  
 \*TRUJILLO, ANTERO A. WICHITA  
 TUCKER, DONALD R. LAWRENCE  
 TUCKER, SHERIDAN G. SHAWNEE MISSION  
 TUCKER, VIRGINIA L. LAWRENCE  
 TUDNG, TRAN MANH, AUGUSTA  
 TURNER, JOHN W. GARDEN CITY  
 TUTERA, GINO, SHAWNEE MISSION  
 TWEET, FREDRICK A. PITTSBURG

## U

UBELAKER, ERNEST J. SCUTH HAVEN  
 UHLIG, PAUL J. WICHITA  
 UHR, NATHANIEL, TOPEKA  
 \*ULRICH, BRIAN K. WICHITA  
 UNDERWOOD, CHARLES C. EMPORIA  
 UNREIN, ROBERT J. GREAT BEND  
 UTLEY, JAMES HARMON, KANSAS CITY  
 UY, WILSON D. COFFEYVILLE

## V

VACHAL, EVA, GARDEN CITY  
 VAKAS, JOHN L. COFFEYVILLE  
 VALK, WILLIAM L. SHAWNEE MISSION  
 \*VAN LEEUWEN, GERALD, WICHITA  
 VAN SICKLE, GREGORY J. TOPEKA  
 VAN THULLENAR, PHILIP A. KANSAS CITY  
 VANDE GARDE, LARRY D. TOPEKA  
 VANDER VELDE, STANLEY L. EMPORIA  
 VANNAMAN, DONALD D. SHAWNEE MISSION  
 VARGHESE, GEDRGE, KANSAS CITY  
 VATS, TRIBHAWAN S. KANSAS CITY  
 VAUGHAN, DONNA A. NEWTON  
 VELARDE, HUGO, KANSAS CITY  
 \*VERGEL, JAIME A. MIAMI, FL  
 VERMA, ASHA, PARSONS  
 VERNON, MARY C. LAWRENCE  
 VIN ZANT, LARRY E. WICHITA  
 VINE, DONALD LEE, WICHITA  
 VINZANT, MARK N. DERBY  
 VINZANT, WHITNEY L. WICHITA  
 VISSER, VALYA E. KANSAS CITY  
 VDGL, STANLEY J. TOPEKA  
 VOGT, VERNON W. NEWTON  
 VDLKMANN II, HARLEY W. MANHATTAN  
 VDN GKASEMSIRI, SUNAN, NEWTON  
 VDN LEONRDD JR, GEORGE, DIGHTON  
 VDN RUDEN, WILLIAM J. HUTCHINSON  
 VODRHEES, CARROLL D. LEAVENWORTH  
 VODRHEES, GORDON S. LEAVENWORTH  
 VORHEES, VICTOR J. WICHITA  
 VOTAPKA, WILLIAM L. STOCKTON  
 VOTH, DOUGLAS W. WICHITA  
 VOTH, HAROLD M. TOPEKA

## W

WADDELL, BILL D. KANSAS CITY  
 WADE, THEODORE E. LIBERAL  
 WADE III DO, WILLIAM E. TOPEKA  
 WADUD, ABDUL, WICHITA  
 WAGENBLAST, HOWARD R. SALINA  
 WAGGNER, FRANKLIN E. BONNER SPRINGS  
 WALDDRF JR, MELVIN M. GREENSBURG  
 WALKER, JACK D. KANSAS CITY  
 WALKER, MAURICE A. KANSAS CITY  
 WALKER, NELLIE G. LEES SUMMIT, MO  
 WALKER, WILLIAM H. ESKRIDGE  
 WALKER, WILLIAM K. SEDAN  
 WALKER, WILLIAM L. SHAWNEE MISSION  
 WALLACE, LED F. TOPEKA  
 WALLACE JR, WAYNE D. ATCHISON  
 WALLS, WILLIAM J. TOPEKA  
 WALSH, THOMAS E. DNAGA  
 WALTERS, BYRON W. SUN CITY, AZ

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WALTERS, ROBERT MERRILL, WICHITA  
 WALTON, PHILIP O, HORTON  
 WALZ, ROYCE C, TOPEKA  
 WALZ, THOMAS J, ST FRANCIS  
 WANG, SIONEY W, SHAWNEE MISSION  
 \*WANLESS, KIRK M, TOPEKA  
 WARO, HOWARD N, TOPEKA  
 WARO, JAMES A, BELLEVILLE  
 WARO, ROBERT L, STAFFORD  
 WARE, LUCILE M, TOPEKA  
 WARREN, LINDA O, HANOVER  
 WARREN, LLOYD P, WICHITA  
 WARREN, ROGER O, HANOVER  
 WARREN, WIRT A, WICHITA  
 WARREN JR, JOHN W, WICHITA  
 WARRICK, DAVID ALAN, TOPEKA  
 WATERS, CLARENCE N, SALINA  
 \*WATERS, DALE A, TOPEKA  
 WATTS, HARRY E, HAYS  
 WAXMAN, DAVID, KANSAS CITY  
 WAYLAN, THORNTON L, NASHVILLE  
 WEARE, MARY E, SHAWNEE MISSION  
 WEAVER, J ROBERT, WICHITA  
 WEAVER, JACK O, WICHITA  
 WEAVER, WALTER O, TOPEKA  
 WEBB, JAMES R, SHAWNEE MISSION  
 WEBER, DARRELL J, TOPEKA  
 WEBER, ROBERT W, SALINA  
 WEBER, ROY R, NEWTON  
 WEBER, WALLACE N, HAYS  
 WEBER II, RALPH H, SALINA  
 WEBER JR, HUGO P, WICHITA  
 WEBSTER, BOBBY W, WICHITA  
 WEEDLE, DOUGLAS P, FORT SCOTT  
 WEDEL, KENNETH O, MINNEAPOLIS  
 WEDEL, KERMIT G, MINNEAPOLIS  
 WEDIN, PAUL H, WICHITA  
 WEIDENSAUL, O N, HUTCHINSON  
 WEIGAND, JOEL T, WELLINGTON  
 WEIGEL, JOHN W, KANSAS CITY  
 WEIPPERT, EDWARD J, WICHITA  
 WEIR, WILLIAM C, ERIE  
 WEISMAN, EDWARD B, SHAWNEE MISSION  
 WELCH, JACK W, HALSTEAD  
 WELCH, LAUREN A, GARDEN CITY  
 WELCH, LAUREN K, WICHITA  
 WELCH, MARTIN H, WICHITA  
 WELCH, MAURA S, GARDEN CITY  
 WELL, MICHAEL A, LAWRENCE  
 WELLER, ELIZABETH B, KANSAS CITY  
 WELLER, RONALD ALAN, KANSAS CITY  
 WELLS, ALVIN Y, WINFIELD  
 WELLS, BRUCE W, WINFIELD  
 WELLS, MAX MICHAEL, DALLAS, TX  
 WELLSHEAR, CHARLES C, WICHITA  
 WELTNER, ROGER P, BELCIT  
 WENINGER, JOHN H, WICHITA  
 WERNER, WILLARD F, TRIBUNE  
 WERTH, CLAUDE J, SHAWNEE MISSION  
 WERTH, DARRELL DEAN, HAYS  
 WERTZBERGER, JOHN, LAWRENCE  
 WERTZBERGER, KENNETH LYNN, LAWRENCE  
 WESBROOK, CLYDE W, N Y, IL  
 WESCOE, W CLARKE, NEW YORK, NY  
 WEST, C OMER, BONNER SPRINGS  
 WEST, WILLIAM T, WICHITA

WHALLON, JACOB T, WICHITA  
 WHEELER, DWIGHT E, NEWTON  
 \*WHEELER, NICKY RAY, WICHITA  
 WHEELER, PINCKNEY R, WICHITA  
 WHITAKER, JAMES A, WICHITA  
 WHITAKER, MARK A, GARONER  
 WHITAKER, REN R, OBERLIN  
 WHITE, CHARLES L, GREAT BEND  
 WHITE, CHARLES M, WICHITA  
 WHITE, DONALD C, COFFEYVILLE  
 WHITE, FAGAN N, RUSSELL  
 WHITE, JOHN P, PARSONS  
 WHITE, R BURNLEY, WINFIELD  
 WHITE, THADDEUS H, MANHATTAN  
 WHITE II, BENJAMIN E, EL DORADO  
 WHITEHEAD, RICHARD E, SHAWNEE MISSION  
 WHITLEY, DOUGLAS M, SHAWNEE MISSION  
 WIBERG, THOMAS A, WICHITA  
 WIEGMAN, HUGH ALAN, HAYS  
 WIEGMANN, THOMAS B, KANSAS CITY, MO  
 WIENS, J WENOELL, NEWTON  
 WIENS, PETER K, NESS CITY  
 WIGGINTON, GERALD O, O.O., SHAWNEE MISSION  
 WIGGLESWORTH, ANNE, TOPEKA  
 WIGGS, JAMES W, GREAT BEND  
 WIKSTEN, VERNON C, TOPEKA  
 WILCHINS, LAWRENCE J, LAS VEGAS, NV  
 WILCOX, DONALD E, TOPEKA  
 WILCOX JR, HOWARD L, HAYS  
 WILCOX SR, HOWARD L, LAWRENCE  
 WILDER, LOWELL W, WICHITA  
 WILDS, CHARLES E, TOPEKA  
 WILEY, HORACE M, GARDEN CITY  
 WILEY, JOHN H, SHAWNEE MISSION  
 WILKINSON, LARRY K, WICHITA  
 WILLARD EXEC SE, JUDY, ELLINWOOD  
 WILLIAMS, CHARLES L, WICHITA  
 WILLIAMS, EVAN ROBERT, DOOGIE CITY  
 WILLIAMS, HOMER J, OSAGE CITY  
 WILLIAMS, HOWARD V, WICHITA  
 WILLIAMS JR, STERLING B, KANSAS CITY  
 WILSON, COL JAMES W, FT RILEY  
 WILSON, H RANDOLPH, HALSTEAD  
 WILSON, L BARRICK, SHAWNEE MISSION  
 WILSON, MARVIN H, TOPEKA  
 WILSON, ROBERT B, SHAWNEE MISSION  
 WILSON, ROBERT L, VALLEY CENTER  
 WILSON, SLOAN J, SHAWNEE MISSION  
 WINBLAD, JAMES N, WINFIELD  
 WINCHELL, H H FORSYTH, WICHITA  
 WINCHESTER, EUGENE B, WICHITA  
 WINER, RICHARD S, TOPEKA  
 WING, NANCY J, TOPEKA  
 WINN, RANDALL S, KANSAS CITY  
 WINTER JR, CALVERT J, KANSAS CITY  
 WISDOM, JAY K, WICHITA  
 WISE III, JOSEPH EDWARD, KANSAS CITY  
 WISNER JR, HARRY J, WICHITA  
 WISNER JR, JOHN HENRY, KANSAS CITY  
 WITTMANN, ALBERT F, WICHITA  
 WOERNER, DAVID R, SALINA  
 WOLF, CURTIS V, LYONS  
 WOLF, KARL T, KANSAS CITY  
 WOLF, PATRICK G, WICHITA  
 WOLFE, FREDERICK, WICHITA  
 WOLFF, FREDERICK P, PRATT

WOLKOFF, COR A STARK, SAN FRANCISCO, CA  
 WOLLMANN, MARTIN, LAWRENCE  
 WONG, BERT Y, KANSAS CITY  
 WONG, NORMUNO, TOPEKA  
 WOOD, DOUGLAS H, PITTSBURG  
 WOOD, EDWARD RUSSELL, TOPEKA  
 WOOD, FRED M, KANSAS CITY  
 WOOD, GARY B, WICHITA  
 WOOD, ROBERT O, HORTON  
 WOODHOUSE, CHARLES L, WICHITA  
 WOODS, HUGH J, SMITH CENTER  
 WOODS, ROBERT P, TOPEKA  
 WOOLLCOTT JR, PHILIP, CHICAGO, IL  
 WORSING JR, ROBERT A, WICHITA  
 WORTMAN, JACK A, HUTCHINSON  
 WRAY, ALEXANDER J, WICHITA  
 WRIGHT, KENDALL M, EMPORIA  
 WRIGHT, STANLEY E, JUNCTION CITY  
 WRIGHT III, ROBERT W, KANSAS CITY  
 WRIGHT JR, ROBERT W, KANSAS CITY  
 \*WU, JIN-TZE, WICHITA  
 WULFF, EDWIN T, ATCHISON  
 WURSTER, GEORGE R, SHAWNEE MISSION

Y

YAGHMOUR, TALAAT E, PITTSBURG  
 YE, RICHARD C, SHAWNEE MISSION  
 YEOMANS, RONALD N, OLATHE  
 \*YOCKEY, CHARLES C, WICHITA  
 YODER, EMERSON O, DENTON  
 YOHE, RUTH M, SHAWNEE MISSION  
 YORKE JR, CRAIG H, TOPEKA  
 YOUNG, ROGER L, AFRICA  
 YOUNG, CHARLES H, ATCHISON  
 YOUNG, DOUGLAS L, WICHITA  
 YOUNG, JOHN W, SHAWNEE MISSION  
 YOUNG, PAUL E, TOPEKA  
 YOUNG, ROBERT, WICHITA  
 YOUNG, THEODORE E, TOPEKA  
 YOUNGBERG, DEAN I, WICHITA  
 YOUNGLOVE, R HAL, SHAWNEE MISSION  
 YOUNGSTROM, KARL A, SHAWNEE MISSION  
 YULICH, JOHN O, SABETHA

Z

ZABEL, KENNETH P, PITTSBURG  
 ZACHARIAS, CARL KURT, DOOGIE CITY  
 ZACHARIAS, DAVID LLOYD, TOPEKA  
 ZACK, ASHLEY S, SHAWNEE MISSION  
 ZAINALI, ASSAOOLLAH, LIBERAL  
 ZAMIEROWSKI, DAVID S, SHAWNEE MISSION  
 ZAREMSKI, SHERMAN C, KANSAS CITY  
 ZARNOW, HILARY, WICHITA  
 ZATZKIN, JAY B, WICHITA  
 ZELLER, MYRON J, GARDEN CITY  
 \*ZEPICK, LYLE F, WICHITA  
 ZIEGLER, DEWEY K, KANSAS CITY  
 ZIMMERMAN, DANIEL O, SHAWNEE MISSION  
 ZIMMERMAN, KENNETH O, WICHITA  
 ZIMMERMAN, WILLIAM H, TOPEKA  
 ZINN, THOMAS W, KANSAS CITY  
 ZONGKER, PHILIP E, WICHITA



# Medical Specialty Codes

## Used in This Directory

<b>A</b>	<b>Allergy</b>	<b>NP</b>	<b>Neuropsychiatry</b>
<b>ADM</b>	<b>Administrative Medicine</b>	<b>NR</b>	<b>Nuclear Radiology</b>
<b>ADT</b>	<b>Addictionology</b>	<b>NS</b>	<b>Neurological Surgery</b>
<b>AM</b>	<b>Aviation Medicine</b>	<b>OBG</b>	<b>Obstetrics and Gynecology</b>
<b>ANES</b>	<b>Anesthesiology</b>	<b>OM</b>	<b>Occupational Medicine</b>
<b>CD</b>	<b>Cardiovascular Disease</b>	<b>ON</b>	<b>Oncology</b>
<b>CDS</b>	<b>Cardiovascular Surgery</b>	<b>OPH</b>	<b>Ophthalmology</b>
<b>CDTS</b>	<b>Cardiovascular &amp; Thoracic Surgery</b>	<b>ORS</b>	<b>Orthopedic Surgery</b>
<b>CHN</b>	<b>Child Neurology</b>	<b>OS</b>	<b>Other Specialties</b>
<b>CHP</b>	<b>Child Psychiatry</b>	<b>OST</b>	<b>Osteopathy</b>
<b>CP</b>	<b>Clinical Pharmacology</b>	<b>OTO</b>	<b>Otorhinolaryngology</b>
<b>D</b>	<b>Dermatology</b>	<b>P</b>	<b>Psychiatry</b>
<b>DR</b>	<b>Diagnostic Roentgenology</b>	<b>PATH</b>	<b>Pathology</b>
<b>EENT</b>	<b>Eye, Ear, Nose and Throat</b>	<b>PD</b>	<b>Pediatrics</b>
<b>EM</b>	<b>Emergency Medicine</b>	<b>PDA</b>	<b>Pediatric Allergy</b>
<b>END</b>	<b>Endocrinology</b>	<b>PDC</b>	<b>Pediatric Cardiology</b>
<b>ENT</b>	<b>Ear, Nose, Throat</b>	<b>PDN</b>	<b>Pediatric Neurology</b>
<b>ES</b>	<b>Endoscopy Surgery</b>	<b>PDO</b>	<b>Pediatric Ophthalmology</b>
<b>FM</b>	<b>Family Medicine</b>	<b>PDR</b>	<b>Pediatric Radiology</b>
<b>FP</b>	<b>Family Practice</b>	<b>PDS</b>	<b>Pediatric Surgery</b>
<b>GE</b>	<b>Gastroenterology</b>	<b>PH</b>	<b>Public Health</b>
<b>GEN</b>	<b>Genetics</b>	<b>PM</b>	<b>Physical Medicine &amp; Rehabilitation</b>
<b>GER</b>	<b>Geriatrics</b>	<b>PNP</b>	<b>Pediatric Nephrology</b>
<b>GP</b>	<b>General Practice</b>	<b>PS</b>	<b>Plastic Surgery</b>
<b>GPM</b>	<b>General Preventive Medicine</b>	<b>PUD</b>	<b>Pulmonary Disease</b>
<b>GS</b>	<b>General Surgery</b>	<b>R</b>	<b>Radiology</b>
<b>GYN</b>	<b>Gynecology</b>	<b>RES</b>	<b>Resident</b>
<b>HEM</b>	<b>Hematology</b>	<b>RHU</b>	<b>Rheumatology</b>
<b>ID</b>	<b>Infectious Diseases</b>	<b>RM</b>	<b>Rehabilitative Medicine</b>
<b>IE</b>	<b>Insurance Examination</b>	<b>RN</b>	<b>Radiology &amp; Neurology</b>
<b>IM</b>	<b>Internal Medicine</b>	<b>RO</b>	<b>Radiology/Oncology</b>
<b>MDST</b>	<b>Medical Student</b>	<b>RT</b>	<b>Radiation Therapy</b>
<b>MO</b>	<b>Medical Oncology</b>	<b>SON</b>	<b>Surgical Oncology</b>
<b>N</b>	<b>Neurology</b>	<b>TR</b>	<b>Therapeutic Radiology</b>
<b>NEP</b>	<b>Nephrology</b>	<b>TS</b>	<b>Thoracic Surgery</b>
<b>NM</b>	<b>Nuclear Medicine</b>	<b>U</b>	<b>Urology</b>
<b>NEO</b>	<b>Neonatology</b>	<b>00</b>	<b>Retired</b>

# Physician Distribution by Cities

## EXPLANATION OF CODES USED IN THIS SECTION

Line 1: 

Doe, John R.,

1234 Oak St.,

67052

(Name)

(Street Address)

(Zip Code)

Line 2: 

(654-2222)

(Telephone Number)

Line 3: 

33

M

1902

58

FP

(Year of Birth)

(Sex)

(Medical School)

(Year of Graduation)

(Specialty)

Telephone area code follows city name.

\* Probationary Members

### ABILENE—913 (Dickinson County Society)

BERKLEY, DON H., 1111 N BRADY,67410  
263-4131  
35 M 1902 61 FP  
BIGGS, DENNIS, 1405 N CEDAR,67410  
263-7190  
48 M 1902 74 FP  
CHAFFEE, DEAN C., RR 1,67410  
263-4131  
11 M 1902 44 FP  
COLEMAN, GARY, 1405 N CEDAR,67410  
263-7190  
46 M 1902 72 FP  
MOHLER, JACK M., 515 NE TENTH,67410  
-  
32 M 1902 61 PM  
NARCISO, VICENTE O., 515 NE 10TH ST,67410  
263-2253  
45 M 74810 68 GS  
RORABAUGH, DONALD C., PROFESSIONAL BLDG,67410  
263-4131  
33 M 1902 58 FP  
SCHWARTING, J STEVE, 1405 N CEDAR,67410  
263-7190  
46 M 3401 72 FP  
SHEERN, MARK DOUGLAS, 1111 N BRADY,67410  
263-4131  
51 M 1902 76 FP

### ALMA—913 (Pottawatomie County Society)

MCKNIGHT, ELLIS B., .66401  
765-3317  
03 M 1902 33 FP

### ALTAMONT—316 (Labette County Society)

JACKSON, VICTOR L., BOX 467,67330  
784-5318  
20 M 2105 50 FP

### ANDALE—316 (Sedgwick County Society)

GOODWIN, MARY K., ANDALE CLINIC, 67001  
267-0865  
53 F 1902 77 FP  
STECH, JOSEPH M., ANDALE CLINIC,67001  
445-2152  
27 M 3006 56 FP

### ANDOVER — 316 (Sedgwick County Society)

ESTRADA, EDMUNDO C., PO BOX 496,67002  
733-1331  
43 M 74801 67 GS  
ESTRADA, LINA, PO BOX 946, 67002  
733-1331  
43 F 74801 68 PD

### ANTHONY—316 (Tri-County Society)

ANTRIM, PHILIP JENIFER, 1101 E SPRING,67003  
842-5144  
15 M 1902 42 FP  
HALL, JERRY O., 1101 E SPRING,67003  
842-5144  
31 M 3901 56 FP

### ARKANSAS CITY—316 (Cowley County Society)

ALVAREZ, NORBERTO, 112 E CENTRAL,67005  
442-4850  
27 M 27501 53 FP  
AUCAR, ALFREDO, BOX 1105,67005  
442-1710  
23 M 27501 53 OTO  
CAMPBELL, GARLAND L., 114 W WALNUT,67005  
442-1350  
13 M 1902 40 U  
CHAVALA, SUDARSAN, 2508 EDGE MONT DR,67005  
442-4300  
43 M 49511 68 OPH  
GREEN, LAWRENCE C., 112 EAST CENTRAL AV,67005  
442-4850  
43 M 3901 69 FP  
HINSHAW, EDGAR O., RT #3,67005  
442-1273  
15 M 1902 51 R  
LEIKER, JOSEPH, 112 E CENTRAL,67005  
442-7900  
48 M 1902 73 IM  
MEEK, GEORGE C., PO BOX 1148,67005  
442-2100  
05 M 1902 32 FP  
OLO, JERRY L., PO BOX 1148,67005  
442-2100  
49 M 1902 74 FP  
PEREIRA, WILLY G., 2508 EDGE MONT DR,67005  
442-8540  
39 M 73701 67 IM  
ROSS, DAVID K., PO BOX 1148,67005  
442-2100  
48 M 1902 75 FP  
SINGH, GIRVAR, 2508 EDGE MONT DR,67005  
442-4300  
40 M 49555 64 OPH  
SMITH, BRUCE G., 115 E RADIO LANE,67005  
442-5600  
20 M 1902 44 IM  
SMITH, NEWTON C., PO BOX 1148,67005  
442-2100  
21 M 3901 45 FP  
SMITH, STEPHEN J., 115 HILLSIDE,67005  
442-5600  
45 M 1902 71 FP

### ARMA—316 (Crawford County Society)

RIGLER, WILSON F., 511 WASHINGTON,66712  
347-8619  
42 M 1803 69 FP



**ASHLAND—316**  
(*Iroquois County Society*)

MC NICKLE, GEORGE ANDREW, BOX 907, 67831  
635-2222  
47 M 1902 75 FP

**ATCHISON—913**  
(*Atchison County Society*)

BOSSE, FRANK K, 1301 RIVERVIEW DRIVE, 66002

09 M 2802 33 00  
BRADY, CHARLES S, 111 N 5TH ST, 66002  
367-1232  
11 M 3006 38 GS  
BRIBACH, EUGENE J, 125 1/2 N 5TH, 66002  
367-0225  
83 M 2802 05 OPH  
BROWN, ROBERT O, 1400 NORTH 2ND, 66002  
367-1922

14 M 1902 44 FP  
BURKE, JOSEPH V, 1301 N 3RD, 66002  
367-5496

35 M 3006 66 GS  
FAST, ROBERT E, 1225 N 2ND, 66002  
367-0362

48 M 1902 74 OBG  
FAST, W SPENCER, RAMSAY MED CLINIC, 66002  
367-0362

11 M 3006 39 FP  
GROWNEY, JOHN T, 801 ATCHISON, 66002  
367-5020

37 M 3006 63 FP  
HART, LAWRENCE E, 1412 N 2ND, 66002  
367-5054

32 M 1902 64 FP  
MORRISON, IRA R, 825 N 10TH, 66002  
367-4396

07 M 1611 36 1M  
RIDER, JAMES W, 1225 N 2ND ST, 66002  
367-0362

47 M 2803 73 FP  
TAYLOR, ABDEL K, 1225 N 2ND, 66002  
367-0362

43 M 33002 68 GS  
TIVORSK, ARKON, 1716 COUNTRY LANE, 66002  
367-2131

40 M 89101 68 R  
WALLACE JR, WAYNE O, 1301 N THIRD, 66002  
367-7300

36 M 2803 65 FP  
WULF, EDWIN T, 923 N FIFTH, 66002  
367-5033

07 M 2834 36 FP  
YOUNG, CHARLES H, 1301 N 3RD, 66002  
367-4053

23 M 1902 53 FP

**ATTICA—316**  
(*Tri-County Society*)

STONE, GRANT C, 215 W AVE D, 67009  
254-7219  
08 M 5605 35 FP

**ATWOOD—316**  
(*Northwest Kansas Society*)

DILL, RODNEY, 411 PAGE, 67730  
626-3229  
41 M 74811 77 GP

**AUGUSTA—316**  
(*Butler-Greenwood Society*)

ANDERSON, DALE W, 209 D WEST 7TH STREET, 67010  
775-5432

30 M 1902 55 FP  
BARBER, JAMES L, AUGUSTA PLAZA, 67010  
775-5432

31 M 1902 57 FP  
LAHAM, ALEXANDER J, RR 3 BOX 87, 67010

20 M 1902 44 00  
TUONG, TRAN MANH, AUGUSTA PLAZA, 67010  
775-5432

39 M 94101 65 GP

**BAXTER SPRINGS—316**  
(*Cherokee County Society*)

ALQUIST, VERYL D, 21ST & FAIRVIEW, 66713  
623-4942

17 M 1902 42 GS  
CHUBB, RICHARD M, 445 EAST 10TH, 66713  
856-2444

29 M 1606 54 FP  
FITZGERALD, THOMAS J, 445 E TENTH - BOX 578, 66713  
856-2144

46 M 74807 79 GP  
LAUGHLIN, ROBERT L, 1413 FAIRVIEW AVE, 66713  
856-2144

52 M 74808 79 GP  
MEHAFFY, ORVILLE A, 411 E 11TH, 66713  
856-2383

42 M 1902 69 FP

**BELLEVILLE—913**  
(*Republic County Society*)

BEIDERWELL, PAUL L, 2703 M ST, 66935

08 M 3901 38 FP  
CHANEY, ERNIE J, 2316 G STREET, 66935  
527-2237

27 M 1902 56 FP  
DOUBEK, HERBERT D, 2316 G ST, 66935  
527-2237

28 M 1902 56 FP  
SCOTT, DUANE L, BELLEVILLE CLINIC, 66935  
527-2217

34 M 1902 60 FP  
WARD, JAMES A, 1206 18TH ST, 66935  
527-2217

34 M 1902 58 FP

**BELOIT—913**  
(*Mitchell County Society*)

DOBRAZ, ROBERT A, 310 W 8TH, 67420

738-2246  
24 M 1902 52 FP  
DRAKE, DOUGLAS J, MEDICAL CENTER, 67420

738-2246  
43 M 1902 71 FP  
KLEND JR, MARTIN B, BELDIT MED CENTER, 67420

738-2246  
38 M 1643 63 GS  
LONEY, JOHN M, 310 WEST 8TH, 67420

738-2246  
50 M 1902 74 1M  
WELTMER, ROGER P, 112 W MAIN, 67420

738-2574  
18 M 1902 44 U

**BLUE RAPIDS—913**  
(*Northeast Kansas Society*)

LAWLESS, HAROLD L, 607 LINCOLN, 66411  
226-7202

29 M 702 54 FP

**BONNER SPRINGS—913**  
(*Wyandotte County Society*)

MAY, KENNETH L, 122 N NETTLETON, 66012  
422-2020

20 M 1902 51 FP  
MITTS, ERNEST W, 122 N NETTLETON, 66012  
422-2020

22 M 1902 51 FP  
WAGGONER, FRANKLIN E, 122 N NETTLETON, 66012  
422-2020

26 M 1902 61 FP  
WEST, C OMER, LAKE OF FOREST, 66012  
371-3572

92 M 1902 23 D

**BUHLER—316**  
(*Reno County Society*)

FRIESEN, ORLANDO J. 107 W 2ND.67522  
543-2330  
27 M 1902 S6 FP

**CALDWELL—316**  
(*Tri-County Society*)

KINNAN, L F. 523 S MARKET.67022  
845-6422  
18 M 3901 42 FP

**CANEY—316**  
(*Southeast Kansas Society*)

MOORE, ROBERT F. 4TH & MCGEE.67333  
879-2135  
28 M 1902 S6 FP

**CEDAR VALE—316**  
(*Southeast Kansas Society*)

COHNBERG, ROSELLEN E. PO BOX 398.67024  
758-2266  
22 F 2802 47 FP  
PETERS, DALE W. PO BOX 398.67024  
-  
21 M 1902 45 P

**CHANUTE—316**  
(*Southeast Kansas Society*)

ABBUHL, DON R. 505 SOUTH PLUMMER.66720  
431-2500  
18 M 1902 44 GS  
ASHLEY, SAMUEL G. 505 SOUTH PLUMMER.66720  
431-2500  
16 M 1902 43 FP  
BAKER, HENRY K. 811 WEST MAIN.66720  
431-1600  
08 M 1606 35 GS  
BURKMAN, REUBEN J. 1501 W 7TH.66720  
431-9310  
28 M 1902 S4 FP  
DICK JR, HENRY J. 1501 W 7TH.66720  
431-9310  
27 M 1902 S8 FP  
GEHRT, EARL B. 505 SC PLUMMER.66720  
431-2500  
32 M 1902 62 FP  
HASKINS, ROBERT J. 505 S PLUMMER.66720  
431-2500  
46 M 1902 74 FP  
HUDSON, JAMES R. 616 HILLSIDE.66720  
431-4000  
37 M 1902 63 R  
KIHM, ALBERT A. 505 S PLUMMER.66720  
431-2500  
27 M 1902 55 FP  
MIH, ALEXANDER. 1002 WEST 4TH.66720  
473-2227  
22 M 24209 47 ANES  
PARHAM, VERDON W. 505 S PLUMMER.66720  
431-2500  
47 M 1902 73 FP

**CHAPMAN—316**  
(*Dickinson County Society*)

SVD800A, CHARLES R. 413 N MARSHALL.67431  
922-6400  
18 M 1902 46 FP

**CHETOPA—316**  
(*Labette County Society*)

PEFFLY, ELMER D. 327 MAPLE.67336  
236-7188  
22 M 3901 S3 FP

**CLAY CENTER—913**  
(*Clay County Society*)

ANDERSON, SEVERT A. 1749 BERGLUND DR.67432  
-  
07 M 1902 36 00  
CARLETON, RICHARD C. 709 LIBERTY.67432  
632-S603  
31 M 300S 61 FP  
DALUM, PETER JOSEPH. 709 LIBERTY SUITE C.67432  
632-2181  
45 M 2803 76 FP  
MCVAY, R BRUCE. 1503 FIFTH ST.67432  
-  
97 M 1902 29 00  
O'DONNELL, RICHARD H. 709 LIBERTY.67432  
632-3101  
16 M 1902 41 GS  
RICHARDS, DENNIS D. 115 S 6TH.67432  
632-5621  
34 M 1902 60 FP  
STEINBAUER, JEFFREY ROBERT. 709 LIBERTY.67432  
632-2181  
51 M 1902 77 FP

**CLYDE—913**  
(*Cloud County Society*)

FREEBORN JR, WARREN S. .66938  
446-2221  
26 M 1720 S1 FP

**COFFEYVILLE—316**  
(*Southeast Kansas Society*)

BANKS, GILBERT. COFFEYVILLE DOCTORS' CL.67337  
251-7500  
49 M 2401 75 1M  
BRYANT, HOMER L. 803 W 9TH.67337  
-  
99 M 3501 30 00  
CAMPBELL, WILLIAM H. 1411 W 4TH.67337  
251-3235  
39 M 1902 6S OPH  
COYLE, JOHN F. 209 W 7TH.67337  
251-2400  
21 M 1902 44 FP  
DICKINSON, CHARLES R. 108 W 7TH.67337  
251-1340  
20 M 1606 44 GS  
DIXON, RAYMOND W. 1411 W 4TH.67337  
251-1090  
M GS  
EDROZO, M LUZ LUNA. PO BOX 856.67337  
251-1200  
F 74801 68 PATH  
ELLIS, STEPHEN S. 1411 W 4TH.67337  
251-3360  
11 M 2802 36 GS  
GIBBS, EUGENE. PO BOX 716.67337  
251-7260  
M 64914 68 FP  
HA, SANG W. 504 WILSHIRE.67337  
251-7750  
3S M S8309 60 08G  
HAN, CHAN S. 908 SIGGINS.67337  
251-1560  
3S M S8306 61 PO  
HOWERTER JR, BERNARD E. PO BOX 659.67337  
251-4790  
43 M 1803 68 U  
JIRICKO, MILOS. 2510 W EIGHTH.67337  
251-1200  
37 M 28601 61 ANES  
NICHOLS, RICHARD. 1411 W FOURTH.67337  
251-6540  
M 1803 73 ORS  
READ, WILLIAM T. 1411 WEST 4TH.67337  
251-1120  
16 M 2802 40 FP  
SANDHU, PAUL S. PO BOX 257.67337  
251-2450  
42 M 49508 6S GS  
UY, WILSON D. COFFEYVILLE MEM HOSPITAL.67337  
251-1200  
42 M 74801 67 PATH  
VAKAS, JOHN L. 1508 W 4TH.67337  
251-3443  
38 M 1902 64 1M



WHITE, DONALD C. PO BOX 262,67337  
251-1200  
35 M 3515 65 R

**COLBY—913**  
(Northwest Kansas Society)

DAHL, ASHER W. COLBY CLINIC,67701  
462-3333  
28 M 1902 58 FP  
HASSETT, GERARD R. 1875 HARVEY,67701  
—  
24 M 3006 50 R  
HILDYARD II, VICTOR H. BOX 28,67701  
462-3332  
47 M 702 73 FP  
JACOBSEN, DWIGHT SKINNER, COLBY CLINIC,67701  
462-3333  
31 M 3545 60 GS  
MARSHALL, GEORGE D. COLBY CLINIC,67701  
462-3333  
09 M 1902 36 FP  
REGIER, LADONNA M. COLBY CLINIC,67701  
462-3332  
47 F 1902 73 FP  
SMITH JR, FLOYD L. COLBY CLINIC,67701  
462-3333  
20 M 1902 44 FP

**COLDWATER—316**  
(Iroquois County Society)

GOERING, DONALD D. BCX 576,67029  
582-2136  
31 M 1902 56 FP

**COLUMBUS—316**  
(Cherokee County Society)

BELCHER, GEORGE D. BCX 309,66725  
429-2557  
34 M 1902 60 FP  
JONES, FORREST H. 219 S KANSAS,66725  
429-3744  
25 M 1902 54 FP  
PASIMIO, ROGER S. R2 BOX 259,66725  
429-1977  
38 M 74801 62 GS

**COLWICH—316**  
(Sedgwick County Society)

LIES, BARTHEL N. 309 S THIRD,67030  
—  
11 M 2802 37 00

**CONCORDIA—913**  
(Cloud County Society)

ERAY, AVIS PAGE, 1010 3RD AVE,66901  
243-1560  
17 F 702 54 FP  
BUTT, MUHAMMAD, CONCORDIA MED GROUP,66901  
243-1560  
46 M 70401 69 GS  
COULTER DO, THAYNE A. 11TH & WASHINGTON,66901  
243-4455  
12 M 2878 37 GP  
FOWLER, WAYNE L. CONCORDIA MED GROUP,66901  
423-1560  
23 M 1720 47 IM  
GELVIN, E RAYMOND, 835 WEST 9TH,66901  
243-1560  
03 M 3005 27 GS  
HOFER, DEWAYNE D. COUNTRY CLUB DR,66901  
243-1263  
36 M 1606 62 R  
KOSAR, CLARENCE D. BOX 362,66901  
—  
98 M 1902 26 00  
LAWTON, MARVIN K. CONCORDIA MED GROUP,66901  
243-1560  
31 M 3005 58 GS

LLOYD, JAMES W. 910 WEST 11TH,66901  
243-7011  
44 M 1902 73 FP  
MCCOMAS JR, MARMADUKE D. 11TH & WASHINGTON ST,66901  
243-2511  
16 M 1902 43 U  
MOORE, JAMES E. 910 W ELEVENTH,66901  
243-1094  
48 M 1902 74 P  
NELSON, PAUL L. 1010 THIRD AVE,66901  
243-1560  
27 M 1902 55 PD  
NIXON, RICHARD R. 519 WASHINGTON,66901  
243-1263  
32 M 1643 57 R  
OWENSBY, L C. 222 W 51TH,66901  
243-3386  
21 M 2802 44 OPH  
RUZICKA, LAWRENCE J. 1010 3RD AVE,66901  
243-1560  
13 M 3005 40 ANES  
SAUNDERS, MICHAEL E. 1404 CRESCENT LANE,66901  
243-1560  
50 M 1902 73 IM  
STRYKER JR, HENRY B. 717 FIRST AVE,66901  
—  
19 M 3501 44 00  
THORNTON JR, FCX HALL P. 1010 3RD AVE,66901  
243-1560  
25 M 5101 50 IM

**COTTONWOOD FALLS—316**  
(Flint Hills Society)

MCKEE, LEO F. ,66845  
273-6681  
16 M 1902 39 FP

**COUNCIL GROVE—316**  
(Flint Hills Society)

BARKER, ROYAL A. 221 HOCKADAY,66846  
767-5126  
21 M 1902 53 FP  
BLACKBURN, ROBERT W. 221 HOCKADAY,66846  
767-5126  
22 M 1902 49 FP  
SCHULTZ, JAMES E. 221 HOCKADAY,66846  
767-5126  
26 M 1902 56 FP

**CUNNINGHAM—316**  
(Wyandotte Society)

ALLBRITTEN JR, FRANK F. PO BOX 177,67035  
—  
14 M 4101 38 00

**DE SOTO — 913**  
(Johnson County Society)

POMMERENKE, FORREST A. 415 E SECOND,66018  
585-1177  
48 M 1902 75 FP

**DENTON—913**  
(Northeast Kansas Society)

YODER, EMERSON D. ,66017  
359-6531  
14 M 1902 49 FP

**DERBY—316**  
(Sedgwick County Society)

MCKERRACHER, ROBERT C. 400 A NORTH BALTIMORE,67037  
688-1779  
27 M 3901 55 FP  
MILLER, LAWRENCE H. 1410 N WOODLAWN,67037  
788-3741  
40 M 1001 67 FP

MOYER, HERMAN J. 200 S BALTIMORE, 67037  
 788-1484  
 24 M 3901 55 FP  
 OLIVER JR, JAMES H. 229 S GEORGIE, 67037  
 788-2867  
 30 M 1606 57 AM  
 VINZANT, MARK N. 1410 N WOODLAWN, 67037  
 681-3092  
 45 M 64914 75 FP

**DIGHTON—316**  
*(Southwest Kansas Society)*

VON LEONROD JR, GEORGE, PO BOX 146, 67839  
 397-5314  
 16 M 1902 43 FP

**DODGE CITY—316**  
*(Ford County Society)*

ABEDEEN, MOHAMED Z. SOUTHWEST CLINIC, 67801  
 227-3141  
 26 M 33002 51 GP  
 AMAWI, MOHAMMAD S. DODGE CITY MED CENTER, 67801  
 225-1371  
 46 M 87501 71 GS  
 AVILA, OSCAR A. DODGE CITY MED CENTER, 67801  
 225-1371  
 41 M 17603 69 1M  
 AYUTHIA, ISSARA I. 3001 AVENUE A, 67801  
 -  
 40 M 89101 66 PATH  
 BAUM, ARNOLD H. DODGE CITY MED CENTER, 67801  
 225-1371  
 16 M 2101 44 OBG  
 BETTERTON, DALE C. PO BOX 1413, 67801  
 225-0200  
 38 M 2604 73 FP  
 BOLES, R OALE, DODGE CITY MED CENTER, 67801  
 225-1371  
 23 M 3901 53 PD  
 BROWNRIFF, RICHARD L. UROLOGICAL ASSOC, 67801  
 225-0075  
 35 M 1902 61 U  
 BUSCH, ANTHONY B. SOUTHWEST CLINIC, 67801  
 -  
 05 M 2002 31 00  
 CHOTIMONGKOL, ANUPONG, DODGE CITY MED CENTER, 67801  
 225-1371  
 43 M 89102 69 OBG  
 CONARO, CLAIR C. DODGE CITY MED CENTER, 67801  
 225-1371  
 27 M 1902 55 1M  
 GARCIA, GUILLERMO O. 2020 CENTRAL, 67801  
 225-1371  
 43 M 23101 68 ORS  
 GREENBERG, GEORGE E. 1904 HURR PARKWAY, 67801  
 276-8241  
 42 M 401 68 R  
 JOHNSON, HOWELL D. DODGE CITY MED CENTER, 67801  
 225-1371  
 45 M 1902 71 1M  
 MCCOY, RONALD, SOUTHWEST CLINIC, 67801  
 227-3141  
 19 M 3901 47 FP  
 MCELHINNEY, CHARLES F. DODGE CITY MED CENTER, 67801  
 227-1371  
 36 M 1902 62 GS  
 MCGINNIS, MICHAEL J. SOUTHWEST CLINIC, 67801  
 227-3141  
 41 M 5501 69 GS  
 MIMOSO, JOSE J. SOUTHWEST CLINIC, 67801  
 227-3141  
 37 M 4201 61 OBG  
 OHMAN, RICHARD J. 1810 1/2 FAIRWAY DR, 67801  
 -  
 15 M 2407 41 00  
 REDDY, SATTI S. UROLOGICAL ASSOC, 67801  
 225-1371  
 35 M 49504 66 U  
 SCHWARTZ, EUGENE W. 1ST NATL BANK BLDG, 67801  
 225-4261  
 24 M 1902 50 OPH  
 STOCKWELL, MORGAN U. 2020 CENTRAL, 67801  
 225-1371  
 24 M 1902 55 1M

TREKELL, WILLIAM V. SOUTHWEST CLINIC, 67801  
 227-3141  
 25 M 1902 52 ORS  
 WILLIAMS, EVAN ROBERT, DODGE CITY MED CENTER, 67801  
 225-1371  
 25 M 1606 52 GS  
 ZACHARIAS, CARL KURT, DODGE CITY MED CENTER, 67801  
 225-1371  
 21 M 40707 47 ORS

**EL DORADO—316**  
*(Butler-Greenwood Society)*

BRIAN, ROBERT M. 123 N ATCHISON, 67042  
 321-1230  
 02 M 1606 30 FP  
 DELLETT, KENNETH B. 3RD E VINE, 67042  
 321-1910  
 30 M 1902 55 OPH  
 GIBBO, CHARLES I. 123 N ATCHISON ST #103, 67042  
 321-4981  
 11 M 4706 44 GS  
 HAFNER, WILLIAM N. 123 N ATCHISON, 67042  
 321-5049  
 35 M 1902 61 GS  
 JACOB, KANNAMPALLY L. 123 N ATCHISON, 67042  
 321-0056  
 31 M 49537 59 U  
 KASSEBAUM, GLEN E. 123 N ATCHISON, 67042  
 321-5082  
 98 M 1606 23 GS  
 LEE, YONG U. 123 N ATCHISON, 67042  
 321-5630  
 35 M 58310 60 GS  
 OLSEN, PHILLIP S. 123 N ATCHISON, 67042  
 321-2100  
 46 M 1902 73 1M  
 OVERHOLSER, NORMAN H. 119 N JONES, 67042  
 321-2010  
 16 M 1902 41 FP  
 PROCTOR, ROBERT W. 123 N JONES, 67042  
 321-2010  
 38 M 1902 63 FP  
 REEDY, VENUMBACA C. ROOM 302, 67042  
 321-3300  
 46 M 49511 70 1M  
 SANDBERG, CHRIS B. 119 NORTH JONES, 67042  
 321-2010  
 48 M 1902 74 FP  
 SHIELDS JR, JAMES M. 119 N JONES, 67042  
 321-2010  
 18 M 4802 42 FP  
 WHITE II, BENJAMIN E. 119 N JONES, 67042  
 321-2010  
 27 M 1902 54 FP

**ELKHART—316**  
*(Seward County Society)*

PERIOD, DOMINADOR T. BOX 997, 67950  
 697-2155  
 44 M 74801 68 GS

**ELLINWOOD—316**  
*(Barton County Society)*

LAW, FINOLEY, MEDICAL ARTS BLDG, 67526  
 564-2170  
 22 M 1902 51 FP  
 WILLARD EXEC SE, JUDY, BARTON COUNTY MED SOCIETY, 67526  
 792-4391

**ELLIS—913**  
*(Central Kansas Society)*

ROCHANAYON, PIRA. 814 JEFFERSON ST, 67637  
 726-4956  
 43 M 89101 69 FP  
 SURFACE, GARONER A. 1204 WASHINGTON ST, 67637  
 -  
 02 M 1902 29 00



**ELLSWORTH—913**  
(Central Kansas Society)

DAVIS, GEORGE R, 308 KINGSLEY, 67439  
472-3121  
19 M 1902 44 GS  
O'DONNELL, HAROLD F, 412 BLAKE, 67439  
-  
99 M 1902 26 OD  
SEITZ JR, JOSEPH E, 308 KINGSLEY, 67439  
472-3121  
22 M 1902 46 FP

**EMPORIA—316**  
(Flint Hills Society)

AMEND, DOUGLAS J, 827 COMMERCIAL, 66801  
343-6565  
46 M 1902 79 OBG  
BEST, JOHN F, 919 W 12TH, 66801  
342-2521  
51 M 2803 77 IM  
BOSILJEVAC, JOSEPH E, 1005 W 12TH, 66801  
685-2151  
M  
BRADLEY, H RUSSELL, 1601 STATE, 66801  
343-2900  
35 M 1902 61 FP  
BROCKHOUSE, JOHN P, 1601 STATE, 66801  
343-2900  
31 M 1902 57 IM  
BURGESON, FRANK G, 1601 STATE, 66801  
342-6989  
40 M 3005 65 OPH  
BUTCHER, THOMAS P, 1128 LAWRENCE, 66801  
342-0722  
05 M 1601 34 GS  
CAMPBELL, EDWARD G, 1601 STATE, 66801  
343-2900  
31 M 1902 61 FP  
CLOSMITH, DONALD C, 1024 W 12TH, 66801  
342-7047  
26 M 1902 58 FP  
DAVIS, DAVID R, 1025 STATE ST APT #2, 66801  
-  
02 M 2101 28 OD  
EDWARDS, DAVID J, 1601 STATE ST, 66801  
343-1191  
43 M 2803 69 ORS  
ELLIS, BOBBY J, 1737 E WILMAN CT, 66801  
343-2900  
51 M 1902 77 IM  
FRAZIER, RICHARD L, 1005 W 12TH, 66801  
342-5137  
40 M 1902 72 GS  
GANN, E LAMONTE, PR #2, 66801  
-  
07 M 2802 37 OD  
GARCIA, GOULD C, 919 WEST 12TH AVE, 66801  
342-2521  
32 M 3607 58 IM  
GEITZ, JAMES M, 919 W 12TH, 66801  
342-2521  
46 M 1902 72 IM  
GINAVAN, DUANE A, 1024 W 12TH, 66801  
342-5876  
35 M 1902 62 FP  
GLENN, JAMES N, 1601 STATE, 66801  
343-1191  
40 M 4804 66 ORS  
HARVEY, JOHN E, 2506 W 15TH, 66801  
343-2900  
39 M 1902 65 OBG  
HAVENHILL II, MARSHALL A, 812 ANDERSON ST, 66801  
343-6400  
35 M 1902 61 OBG  
HOPPER, CHARLES R, 25 W 5TH, 66801  
342-2341  
17 M 1902 47 FP  
KEITH, ROBERT MARSHALL, 705 S COMMERCIAL, 66801  
342-0548  
27 M 801 54 P  
KELLING, COLLYER, 1614 E WILMAN, 66801  
343-7676  
50 M 1902 75 R  
KNECHT, STEPHEN M, NEWMAN MEMORIAL HOSP, 66801  
342-7722  
44 M 1902 70 R

LDHMEYER, KENNETH L, 1024 WEST 12TH, 66801  
342-6622  
18 M 1902 44 FP  
LUEOTKE, WALTER E, NEWMAN MEM HOS, 66801  
343-6800  
18 M 5605 43 PATH  
MIGUELINO, OLIVER M, NEWMAN HOSP, 66801  
343-6800  
35 M 74801 57 PATH  
MORGAN, JOHN L, 919 WEST 12TH, 66801  
342-2521  
15 M 4101 40 IM  
NEIGHBOR, RALPH M, 827 COMMERCIAL ST, 66801  
343-6565  
46 M 1902 72 OBG  
NEUER, FREDERICK S, NEWMAN HOSP, 66801  
342-7722  
46 M 3601 71 R  
PARKER, WAYNE G, EMPORIA STATE UNIVERSITY, 66801  
343-1200  
27 M 1902 56 FP  
PASTOR, VICTOR HUGO, 1601 STATE, 66801  
342-7715  
43 M 13202 68 U  
RYAN, W SCOTT, 2510 W FIFTEENTH, 66801  
343-7590  
47 M 1902 73 PD  
SAUL, F WILLIAM, ROUTE #5, 66801  
-  
07 M 4113 40 OD  
SCHELLINGER, RICHARD P, 1128 LAWRENCE, 66801  
342-0722  
22 M 3005 49 GS  
SNOWBARGER, MARVIN O, 1601 STATE STREET, 66801  
343-2900  
29 M 1902 55 FP  
TRIMBLE SR, DAVID P, 517 MERCHANT STREET, 66801  
342-2572  
04 M 1902 32 OPH  
UNDERWOOD, CHARLES C, 25 WEST 5TH, 66801  
342-2341  
07 M 1902 32 IM  
VANDER VELOE, STANLEY L, 1601 STATE, 66801  
343-2900  
16 M 1902 43 GS  
WRIGHT, KENDALL M, 1024 WEST 12TH, 66801  
343-2376  
45 M 1902 71 FP

**ERIE—316**  
(Southeast Kansas Society)

BRYAN, EMERY C, RT 2 BOX 171, 66733  
-  
04 M 1902 32 OD  
WEIR, WILLIAM C, 115 S MAIN, 66733  
-  
17 M 2501 42 OD

**ESKRIDGE—913**  
(Flint Hills Society)

WALKER, WILLIAM H, 2ND & CEDAR, 66423  
-  
10 M 2401 38 IM

**EUDORA—913**  
(Douglas County Society)

HOLLADAY, KENNETH R, 101 WEST 10TH, 66025  
542-2345  
34 M 1902 58 FP

**EUREKA—316**  
(Butler-Greenwood Society)

CISKEY, WILLIAM J, 1602 NORTH ELM, 67045  
583-7401  
47 M 1902 72 FP  
SKAER, STANLEY ALLEN, 100 E 16TH, 67045  
583-7486  
40 M 3901 65 GS

**FORT RILEY—913**  
(Geary County Society)

WILSON, COL JAMES W, CHIEF OF PROFESSIONAL SVC,66442  
862-9360  
26 M 3901 58 PATH

**FORT SCOTT—316**  
(Bourbon County Society)

AKERS, GUY I, 710 W 8TH,66701  
223-3100  
20 M 1902 53 FP  
ALDIS, HENRY, 710 W 8TH,66701  
223-3100  
13 M 1902 41 OBG  
ALDIS, WILLIAM, 710 WEST 8TH,66701  
223-3100  
20 M 1902 44 GS  
BASHAM, JAMES J, 702 MEADOW LANE,66701  
-  
14 M 1902 37 OO  
BENAGE, JOHN F, 710 W 8TH,66701  
223-2200  
32 M 1902 58 OBG  
BRAUN, EDWARD W, 710 WEST 8TH,66701  
223-3100  
42 M 1902 68 U  
BURKE, JAMES J, 710 W 8TH,66701  
223-3100  
35 M 2834 61 1M  
CHOW, STANLEY Y, 821 BURKE,66701  
223-2200  
18 M 24222 39 R  
DUNSHEE, CARLYLE M, 710 W 8TH,66701  
223-3100  
32 M 1902 57 GS  
GETTLER, DEAN T, 710 WEST 8TH,66701  
223-3100  
31 M 1902 57 GS  
GOOD, JAMES T, 821 BURKE,66701  
223-2200  
21 M 2802 45 PATH  
GRIMALDI, GARY A, 710 W EIGHTH,66701  
223-3100  
49 M 1902 74 OBG  
IRBY, ADDISON C, 416 S JUDSON,66701  
-  
05 M 1606 28 OO  
IRBY, PRATT, 710 WEST 8TH,66701  
223-3100  
13 M 4705 36 U  
MCCANN, PATRICK E, 710 WEST 8TH,66701  
223-3100  
28 M 1902 59 1M  
MCKENNA, MICHAEL J, 323 S JUDSON SUITE 120,66701  
223-3950  
38 M 1902 64 FP  
NELSON, T EUGENE, 710 W 8TH,66701  
223-3100  
41 M 1902 69 FP  
NICHOLS, ROBERT R, 102 S JUDSON,66701  
223-4100  
50 M 2803 76 FM  
PHELPS, DAVID WAYNE, 102 S JUDSON,66701  
223-4100  
51 M 1902 76 FP  
REEVES, CHARLES S, 710 W 8TH,66701  
223-3100  
37 M 1902 63 1M  
SPENCER, JOHN HAROLD, 710 W 8TH,66701  
223-3100  
47 M 1902 74 FP  
WEDDLE, DOUGLAS P, 710 WEST 8TH,66701  
223-3100  
43 M 1720 69 FP

**FREDONIA—316**  
(Southeast Kansas Society)

BACANI, OSWALDO, PO BOX 576,66736  
378-3700  
44 M 74810 70 GS  
BAYLES, HUGH G, PO BOX 30,66736  
378-3412  
25 M 1902 52 FP  
BEAL, RAYMOND J, 600 MADISON,66736  
378-2159  
12 M 1902 38 GS

SUMNER, RALPH N, 712 MADISON,66736  
378-2311  
31 M 1902 57 FP

**GARDEN CITY—316**  
(Southwest Kansas Society)

ARROYO, ZEFERINO, 2124 ANTLER RIDGE DR,67846  
872-2187  
M 74802 GS  
AUSTIN, JOHN D, 601 N 6TH,67846  
276-2346  
14 M 1601 40 FP  
BARNARD III, JAMES A, 1601 HAROING,67846  
275-9671  
31 M 4812 62 OBG  
BEGGS, DAVID F, BOX 1077,67846  
275-9671  
39 M 1902 64 1M  
BIGLER, F CALVIN, 801 N FIFTH,67846  
275-2141  
31 M 801 57 GS  
BRUNO, JAMES W, 1133 KANSAS PLAZA,67846  
276-8201  
42 M 4706 66 FP  
CALBECK, JOHN, 2603 BELMONT PLACE,67846  
275-9671  
50 M 1902 75 1M  
CORONADO, EFRAIN, 1001 LABRADOR, 67846  
275-6111  
37 M 26401 80 DR  
EICHHORN, FRANK D, BOX 719,67846  
276-8132  
25 M 1902 56 FP  
FENTON, ROBERT M, 603 N FIFTH,67846  
275-9671  
20 M 1902 54 FP  
FRY, LUTHER L, PO BOX 1928,67846  
275-9671  
41 M 1902 67 OPH  
GARDINER, TED M, 603 N FIFTH,67846  
275-9671  
M PD  
GILBERT II, JOHN H, BOX 1077,67846  
275-9671  
46 M 1902 70 ORS  
KALBAC, RICHARD W, BOX 1077,67846  
275-9671  
45 M 2803 70 OBG  
KOKSAL, TOM, PLAZA MED CENTER,67846  
276-8201  
M 1902 FP  
MAXFIELD, RUSSELL J, 1133 KANSAS PLAZA,67846  
276-8201  
16 M 1902 41 FP  
MEYERS, STEPHEN, BOX 1077,67846  
275-9671  
48 M 2834 70 PD  
MILLER, ROBERT E, BOX 1077,67846  
275-9671  
26 M 4812 55 GS  
RODRIGUEZ, PAUL L, BOX 1729,67846  
275-6111  
39 M 4706 66 R  
SHUSS, JOHN L, 801 N FIFTH,67846  
275-2141  
49 M 1902 75 GS  
SPIKES, MARION E, 603 N 5TH,67846  
275-9671  
26 M 1902 62 FP  
TEARE, MAX E, 1007 DAVIS,67846  
276-7689  
28 M 1902 54 P  
TURNER, JOHN W, 210 E SPRUCE,67846  
276-3292  
13 M 1902 39 FP  
VACHAL, EVA, 608 N FIFTH,67846  
275-6111  
F PATH  
WELCH, LAUREN A, 508 N SEVENTH,67846  
275-7913  
45 M GS  
WELCH, MAURA S, 603 N FIFTH,67846  
275-9611  
50 F OBG  
WILEY, HORACE M, BOX 1768,67846  
376-6901  
12 M 2802 40 GS  
ZELLER, MYRON J, BOX 1077,67846  
275-9671  
38 M 1902 64 OM



**GARDEN PLAIN—316**  
(Sedgwick County Society)

REINHARDT-WULF, TAISSIA L, PO BOX 273,67050

19 F 91302 42 00

**GARDNER—913**  
(Johnson County Society)

HALL DO, KENDAL WM, RT 1 BOX 173B,66030

884-8711

46 M 2878 76 GP

REECE, A THOMEN, 121 HICKORY CIRCLE,66030

884-8711

37 M 1902 63 FP

WHITAKER, MARK A, 427 W MAIN,66030

884-8711

53 M 1902 77 PD

**GARNETT—913**  
(Anderson County Society)

DOUGHERTY, THOMAS M, 117 W 6TH,66032

448-5421

28 M 1902 55 FP

HARRIS JR, CLAIR B, 320 S OAK ST,66032

448-5431

17 M 1902 44 FP

LEITCH, DAVID A, GARNETT MEDICAL CENTER,66032

448-5421

38 M 1902 63 FP

STEVENS, MILORED J, 202 W 4TH,66032

448-5454

23 F 1902 47 FP

STEVENS, ROBERT L, 202 WEST 4TH,66032

448-5454

23 M 1902 47 FP

**GIRARD—316**  
(Crawford County Society)

FRIGGERI, ROBERT W, 111 N SUMMIT,66743

724-8723

23 M 1902 51 FP

HALL, WESLEY H, PO BOX 158,66743

724-6154

25 M 1902 57 FP

**GLASCO—913**  
(Cloud County Society)

HARWOOD, CLAUDE J, PC BOX 428,67445

568-2342

25 M 1902 55 FP

**GOODLAND—913**  
(Northwest Kansas Society)

AUSTIN, KENNETH O, 520 MAIN,67735

899-3633

33 M 3005 63 FP

FITZGERALD, JAMES E, BOX 871,67735

899-5651

44 M 77 GP

LDNG, LLDYD D, 520 MAIN,67735

899-5651

37 M 1720 63 FP

MCCULLOUGH, ROBERT C, 126 E 10TH BOX 180,67735

899-3633

25 M 702 58 GP

DLSON, CLITUS W, 520 MAIN ST,67735

899-3633

16 M 3005 48 GS

**GREAT BEND—316**  
(Barton County Society)

ALDERSON, THOMAS W, 1315 POLK,67530

792-5341

50 M 1902 75 FP

ANDERSON, LYLE B, 1636 CHEROKEE,67530

793-8141

28 M 1902 60 00

BEAHM, ANDL W, 3923 BROADWAY,67530

793-7827

16 M 1902 43 FP

BEAHM, DONALD E, MED ARTS BLDG,67530

792-3626

45 M 1902 71 OPH

BROWN, C REIFF, 1031 JACKSON,67530

792-4391

31 M 3901 57 ORS

CAVANAUGH, CLAIR J, C K M C,67530

792-2617

23 M 1803 47 R

DEGNER, JAMES B, 3515 BROADWAY,67530

792-2617

31 M 1902 57 R

ELLEDGE, E FREQ, 2222 FOREST,67530

792-3678

38 M 1902 65 U

EVANS, WILLIAM R, 3923 BROADWAY,67530

793-3574

25 M 1902 53 FP

FIESER, CARL W, 3515 BROADWAY,67530

792-2617

45 M 1902 71 R

FLESKE, LEONARD T, 1315 POLK,67530

792-4383

49 M 1902 75 ORS

GATEND, JOSEPH, 1023 JACKSON SQUARE,67530

793-3501

25 M 64901 50 OBG

HILL, LARY MICHAEL, 1017 A JACKSON,67530

793-8141

51 M 1902 77 FP

HOLT, JOHN M, 2200 LAKIN,67530

793-8429

35 M 1902 61 1M

JONES, EDWARD L, 3515 BROADWAY,67530

792-2511

35 M 1902 61 PATH

KING, WILLIAM T, 3421 FOREST,67530

793-3501

35 M 1902 61 OBG

KIRBY, MERLIN G, 3520 LAKIN,67530

793-3091

31 M 1902 56 GS

KRUEGER, HAVEN C, 1023 JACKSON SQUARE,67530

792-2163

32 M 1902 61 PO

MCALLASTER, WENDALE E, 2111 FOREST,67530

793-3591

24 M 1902 54 GS

NIEDEREE, W CURTIS, 1012 WASHINGTON,67530

793-3091

30 M 3006 56 GS

PDLSON, ROBERT C, BOX A 1422 POLK ST,67530

793-8414

17 M 1902 42 DPH

PRESTON, RICHARD, 2200 LAKIN,67530

793-8426

42 M 1902 69 1M

REPLDGL, CHARLES B, 2111 FOREST,67530

793-3591

27 M 1902 53 FP

RUIZ, CARLOS M, 3107 TWELFTH,67530

792-3210

25 M 27501 52 P

SAYLER, JEROME, CENTRAL KS MEDICAL CENTER,67530

792-2511

20 M 4113 50 PATH

SCHUETZ, PERRY N, 1422 POLK BOX A,67530

793-8414

45 M 1902 71 OPH

SCHUKMAN, JAY S, 1315 POLK,67530

792-5341

50 M 1902 75 FP

SHIVEL, DAVIO G, 3523 FOREST,67530

793-3523

28 M 1902 55 FP

SMITH, PERRY MILTON, 1315 POLK,67530

792-5341

52 M 1902 77 FP

SWAN, MAJOR MARTIN, 3923 BROADWAY,67530

792-4540

06 M 1902 43 1M

UNREIN, ROBERT J, 1017A JACKSON,67530  
 792-2504  
 29 M 1902 58 FP  
 WHITE, CHARLES L, 2412 OCVE TERRACE,67530  
 -  
 06 M 1902 36 00  
 WIGGS, JAMES W, 1027 JACKSON,67530  
 792-1336  
 36 M 1720 63 N

**GREENSBURG—316**  
*(Iroquois County Society)*

BRADLEY, J RODERICK, 502 SOUTH WALNUT,67054  
 723-2127  
 23 M 1902 47 FP  
 WALDORF JR, MELVIN H, BRADLEY-WALDORF CLINIC,67054  
 723-2127  
 23 M 1902 47 FP

**HALSTEAD—316**  
*(Harvey County Society)*

AILLON, ALEJANDRO J, HERTZLER CLINIC,67056  
 835-2241  
 39 M 26402 63 TS  
 BAILEY, COLIN, HERTZLER CLINIC,67056  
 835-2241  
 33 M 35205 59 GYN  
 BEUGELSDIJK, HENRY PETER, 421 SPRUCE,67056  
 835-2241  
 49 M 1902 74 ANES

BURNETT, A DEAN, HERTZLER CLINIC,67056  
 835-2241  
 21 M 1902 52 GS  
 DECKER, DONALD D, HERTZLER CLINIC,67056  
 835-2241  
 31 M 1902 56 CO  
 EASTES, GARY DEAN, HERTZLER CLINIC,67056  
 835-2241  
 44 M 4812 71 U  
 GNAU, FREDRIC B, 803 MAIN,67056  
 835-2241  
 42 M 1902 68 OTO  
 HARMS, WILMER A, THE HERTZLER CLINIC,67056  
 835-2241  
 22 M 1902 56 OPH  
 HOOFFER, WILFORD O, HERTZLER CLINIC,67056  
 835-2241  
 30 M 1902 55 TS  
 MALONE, EUGENE M, HERTZLER CLINIC,67056  
 835-2241  
 23 M 1902 56 IM  
 MARSH, CONNIE M, HERTZLER CLINIC,67056  
 835-2241  
 47 F 1902 75 IM  
 MONTGOMERY, LLOYD DAN, HERTZLER CLINIC,67056  
 835-2241  
 43 M 3601 69 P  
 MONTGOMERYSHORT, RUTH G, HERTZLER CLINIC,67056  
 835-2241  
 10 F 1902 37 ENT  
 MORTON, JOHN E, 320 WALNUT,67056  
 835-2241  
 99 M 35211 26 00  
 PRENTISS, HAROLD, 4TH AND CHESTNUT,67056  
 835-2241  
 36 M 1720 62 R  
 RIZZA, ROBERT G, RT #2,67056  
 -  
 30 M 1201 56 PD  
 SHAH, SHARFUDDIN, HERTZLER CLINIC,67056  
 835-2241  
 31 M 70401 58 IM  
 STOFFER, ROBERT P, HERTZLER CLINIC,67056  
 835-2241  
 26 M 1902 48 IM  
 TEJANO, NEONIL A, HERTZLER CLINIC,67056  
 835-2241  
 43 M 74808 67 OR5  
 WELCH, JACK W, HERTZLER CLINIC,67056  
 -  
 18 M 1902 51 00  
 WILSON, H RANDOLPH, HERTZLER CLINIC,67056  
 835-2241  
 20 M 4112 45 GYN

**HANOVER—913**  
*(Northeast Kansas Society)*

WARREN, LINDA D, BOX 38,66945  
 325-2240  
 44 F 1902 70 FP  
 WARREN, ROGER D, BOX 38,66945  
 337-2214  
 31 M 1902 57 G5

**HARPER—316**  
*(Tri-County Society)*

BELLAR, RALPH E, 1019 CENTRAL,67058  
 896-3131  
 31 M 3005 60 FP  
 FORRED JR, WALTER A, 121 E MAIN,67058  
 896-3661  
 43 M 1902 69 FP  
 GARDNER, BILLIE L, 121 E MAIN,67058  
 896-3661  
 25 M 1902 57 FP

**HAYS—913**  
*(Central Kansas Society)*

ALLEN, JAMES E, 2707 VINE #6,67601  
 628-3261  
 46 M 1902 72 IM  
 APPLGATE JR, FRANCIS R, 1010 DOWNING,67601  
 628-8218  
 30 M 1902 55 OPH  
 ARTMAN, JOHN C, 2005 LINCOLN DRIVE,67601  
 625-2518  
 24 M 2002 48 ANES  
 BULA, RALPH E, 3205-A WILLOW,67601  
 -  
 12 M 1902 37 00  
 CARLSON, EARL V, 2818 N VINE ST,67601  
 628-8221  
 31 M 3005 56 OR5  
 CECIL III, JOHN, BOX 833,67601  
 625-6521  
 43 M 4804 69 R  
 CODY, DOROTHY, 2704 WOODROW CT,67601  
 628-4000  
 29 F 3607 53 P  
 CODY, JOHN, 2704 WOODROW CT,67601  
 628-2871  
 25 M 401 60 P  
 COX, ROBERT H, 2507 CANTERBURY RD,67601  
 628-3051  
 43 M 1902 70 PD  
 CRAMM, RUSSELL E, 3004 BROADWAY,67601  
 625-2518  
 30 M 1902 56 G5  
 DYCK, ERIC LEE, FAMILY PRACTICE CLINIC,67601  
 628-6151  
 52 M 1902 77 FP  
 EDDY, VICTOR M, 105 W 13TH,67601  
 625-2551  
 29 M 1902 55 G5  
 ENBERG, ROBERT, 2507 CANTERBURY,67601  
 628-3051  
 43 M 1902 69 PD  
 HAIGLER, JAMES P, 234 WEST 11TH,67601  
 625-2537  
 13 M 3006 39 FP  
 HALLING, L WILLIAM, 1300 EAST 13TH,67601  
 625-5646  
 27 M 5002 57 PATH  
 HANSA, HANSA, 2503 CANTERBURY,67601  
 628-3245  
 45 M 89101 69 ORG  
 HUTCHISON, GLEN C, 3200 COUNTRY LANE,67601  
 628-8251  
 21 M 1902 50 ANES  
 KANE JR, WILLIAM M, CANTERBURY5 CLINIC PA,67601  
 628-3245  
 27 M 1001 54 ORG  
 KIFER, C JAMES, BOX 833,67601  
 625-6521  
 45 M 1902 71 OR  
 LASLEY, MICHAEL B, 2707 VINE SUITE 7,67601  
 628-3217  
 45 M 1902 71 G5  
 MATTICK, IRVIN H, 2818 N VINE,67601  
 628-8221  
 18 M 2802 43 OR5



MEDINA, ANIBAL, 2707 VINE, 67601

628-1019

34 M 45101 62 U

MYRICK, MICKEY, 2501 CANTERBURY RD, 67601

628-6151

42 M 300S 74 FP

NEIL, ROY NEWTON, 1108 MAIN ST S 201B, 67601

628-3215

38 M 300S 6S PATH

NEWCOMB, WARD M, 1300 E 13TH, 67601

625-5646

47 M 300S 71 PATH

RAJEWSKI, RICHARD L, 2509 CANTERBURY, 67601

628-6151

S1 M 1902 76 FP

REYNOLDS, JEFFREY C, 2517 CANTERBURY RD, 67601

625-7311

39 M 1902 64 ENT

REYNOLDS, LLOYD W, 2110 ASH, 67601

-

10 M 3840 34 OD

RICHARDS, DALLAS LEE, 2209 CANTERBURY RD STE 18, 67601

625-4224

49 M 1902 76 1M

RUTNGAMLU, LUECHA, 3004 BROADWAY, 67601

628-6175

40 M 89101 68 GS

SILER, EUGENE T, 1010 DOWNING, 67601

628-8218

24 M 1902 52 OPH

STADALMAN, RDSS EUGENE, 2707 VINE SUITE 7, 67601

628-3217

47 M 1902 73 GS

STUMP, HARL G, 2717 CANAL BLVD, 67601

628-2826

39 M 1902 6S GS

WATTS, HARRY E, 1010 DOWNING AVE, 67601

628-8218

27 M 702 54 OPH

WEBER, WALLACE N, 2707 VINE SUITE 10, 67601

628-3231

43 M 1902 69 D

WERTH, DARRELL DEAN, 2209 CANTERBURY RD STE D, 67601

628-6014

S0 M 1902 7S U

WIEGMAN, HUGH ALAN, BOX 833, 67601

625-6521

34 M 1803 60 R

WILCOX JR, HOWARD L, PO DRAWER 430, 67601

628-8221

44 M 1902 70 ORS

**HAYSVILLE—316**  
(Sedgwick County Society)

MORGAN, NOVA L, 301 W GRAND, 67060

225-1371

20 M 3901 50 FP

**HERINGTON—913**  
(Dickinson County Society)

BUSTOS, JONAS G, 100S NORTH B, 67449

258-221S

41 M 74810 68 GS

DOZIER, FRED S, 100S NORTH B STREET, 67449

258-221S

10 M 4804 34 FP

**HESSTON—316**  
(Harvey County Society)

DIENER, CLAYTON H, PO BOX 386, 67062

327-4122

18 M 1902 54 GS

FRIESEN, FLORENCE V, SHOWALTER VILLA, 67062

-

87 F 1611 14 00

**HIAWATHA—913**  
(Northeast Kansas Society)

BASSETT, P MARCUS, 314 OREGON, 66434

742-2161

51 M 1902 77 FP

DUCKETT, THOMAS G, 201 MIAMI, 66434

-

10 M 1902 34 00

LARSON, DELBERT L, 314 OREGON, 66434

742-2161

30 M 1803 64 FP

MEIDINGER, RAY, 111 S FOURTH, 66434

742-213S

03 M 300S 32 FP

SINNING, GARY, 314 OREGON, 66434

742-2161

49 M 1902 74 FP

**HILL CITY—913**  
(Central Kansas Society)

MARTIN, RONALD C, BOX 207, 67642

674-225S

44 M 74801 77 GP

REDDY, B N, 114 E WALNUT, 67642

674-225S

38 M 495S7 66 PD

REDDY, P JAGANNAOHA, 80 WALNUT DRIVE, 67642

674-225S

42 M 49S11 66 GS

**HILLSBORO—316**  
(Marion County Society)

ENS, GERHARD GEORGE, 613 SOUTH MAIN, 67063

947-5931

20 M 1902 55 FP

ENS, PETER, 209 SOUTH MAIN, 67063

947-3671

14 M 1902 51 FP

FRANZ, ROBERT G, 704 S MAIN, 67063

947-3197

33 M 3901 59 FP

JANZEN, HERMAN F, 212 S JEFFERSON, 67063

-

91 M 1902 3S GP

LOEWEN, PETER S, SKILLED NURSING UNIT, 67063

-

91 M 1902 30 00

REIMER, DARLA, 508 S ASH, 67063

947-2396

52 F 1902 77 FP

**HOISINGTON—316**  
(Barton County Society)

FERNANDEZ, HECTOR D, 3S1 W TENTH, 67544

653-4944

41 M 74809 66 GS

MOORE, ROBERT, 814 NORTH ELM, 67544

653-2151

22 M 3901 53 FP

**HOLTON—913**  
(Jackson County Society)

MOSER, ERNEST C, 438 HILLCREST DR, 66436

-

09 M 1902 34 00

MOSER, M ROSS, 418 WEST FIFTH, 66436

364-3116

19 M 1902 47 FP

MOSER, ROY H, 801 IOWA, 66436

-

04 M 1902 32 00

SEELEY, JAMES C, 418 WEST 5TH, 66436

364-3116

34 M 1902 64 FP

### HORTON—913 (Northeast Kansas Society)

WALTON, PHILIP O, 80X 189.66439  
626-3322  
32 M 1902 63 FP  
WOOD, ROBERT O, 105 W 8TH.66439  
486-2127  
26 M 1902 53 FP

### HOXIE—913 (Northwest Kansas Society)

NEUENSCHWANDER, JOHN, 700 MAIN.67740  
675-3292  
26 M 2802 51 FP  
NEUENSCHWANDER, JOHN RAND, 700 MAIN.67740  
675-3292  
47 M 1902 72 FP

### HUGOTON—316 (Seward County Society)

FREDERICK, M F, 1006 S JACKSON.67951  
544-2784  
20 M 1902 44 FP  
LENEVE, ROBERT T, 1006 S JACKSON.67951  
544-2784  
21 M 3901 46 FP

### HUMBOLDT—316 (Southeast Kansas Society)

LONG, EDWARD E, 8TH & NEW YORK.66748  
473-2411  
01 M 1902 50 FP

### HUTCHINSON—316 (Reno County Society)

ADAMS JR, MARCUS W, 2101 N WALORON.67501  
663-6121  
33 M 3901 59 PO  
ALBRIGHT, JEROLO O, 2101 N WALORON.67501  
663-6121  
39 M 1902 66 FP  
BAUER, THOMAS A, 2101 N WALORON.67501  
663-6121  
41 M 1902 67 1M  
BLANK, JOHN N, ROUTE 5 BOX 220.67501  
-  
07 M 1902 38 00  
BORRA, MARIO J, 1 WEST 8TH.67501  
662-1751  
24 M 2401 47 U  
BOS, NORMAN C, 2101 N WALORON.67501  
663-4406  
24 M 1611 47 ORS  
BRADA, DONALD ROBERT, 308 W 20TH.67501  
662-6041  
39 M 1902 65 P  
BURGER, J DALE, 2101 N WALORON.67501  
663-6121  
21 M 1902 46 FP  
CASAQY, GILBERT N, 39 LINKSLAND OR.67501  
663-3657  
23 M 1902 53 ANES  
CASEY, JAMES, 2101 N WALORON.67501  
663-6121  
42 M 3005 69 PO  
CHEN, JOHN S L, 215 COUNTRYSIDE OR.67501  
-  
33 M 24351 56 ANES  
CHERVEN, PHILIP L, 1100 N MAIN.67501  
662-3364  
45 M 2501 71 PD  
CRAWFORD, ROBERT A, 2101 N WALORON.67501  
663-6121  
16 M 1601 42 FP  
DEPENBUSCH, FRANCIS L, 1708 E 23RD.67501  
663-7187  
38 M 1902 65 OPH  
ECKART, DE MERLE E, 312 WOLCOTT 8LOG.67501  
662-4921  
14 M 1902 40 P

FALTER, RICHARD T, 170B E 23RD ST.67501  
663-7187  
38 M 1902 67 OPH  
FERNIE, ROBERT W, 2100 N MAQ1SON.67501  
-  
06 M 702 34 00  
FOSS, DANIEL C, 2101 N WALORON.67501  
663-6121  
43 M 1902 69 GE  
GOODPASTURE, WILLARD C, 2101 N WALDRON.67501  
-  
10 M 1602 36 00  
GRAVES, KATHRYN, 2101 N WALORON.67501  
663-6121  
49 F 1902 74 0  
HEDRICK, KENNETH E, 2101 N WALORON.67501  
663-6121  
27 M 1902 53 GS  
HOLDERMAN, WALLACE O, 2101 N WALORON.67501  
663-4406  
28 M 1902 54 ORS  
JARROTT, JOHN B, 1100 N MAIN.67501  
669-0191  
16 M 1902 40 ORS  
KLOSTERHOFF, BRUCE E, 1701 E 23RD.67501  
663-2108  
45 M 1902 71 P  
LETTNER, HANS T, 80X 159.67501  
662-7801  
23 M 40716 49 PATH  
LUKENS, DAVIO, 2101 N WALORON.67501  
663-1136  
24 M 2307 48 1M  
MCCOY, CHARLES T, 310 WOLCOTT 8LOG.67501  
662-0121  
16 M 1902 41 OPH  
MCMULLEN, JOSEPH E, 2101 N WALORON.67501  
663-6121  
33 M 1902 62 GS  
MULL, JOHN C, 2101 N WALDRON.67501  
663-6121  
34 M 1902 61 08G  
NEEL, WILBUR B, 2101 N WALORON.67501  
663-6121  
24 M 1902 59 1M  
NEUSCHAFER, DARREL R, 2101 N WALORON.67501  
663-6121  
48 M 1902 74 08G  
NUNEMAKER, MARION E, RR 5 - BOX 1129.67501  
662-5391  
21 M 1902 46 ANES  
OPENSHAW, CALVIN R, 1B24 N MAIN.67501  
662-3305  
21 M 4901 44 GS  
PAINE, GEORGE E, 220 W 23RD.67501  
-  
94 M 1606 19 00  
PEASE, GARY L, 521 WILEY BLOG.67501  
662-445B  
41 M 3005 67 0TO  
PERKINS, JACK L, 2101 N WALORON.67501  
663-6121  
24 M 1902 53 FP  
RATE, PEGGY S, 2221 E 56TH.67501  
663-6121  
46 F 1902 73 PO  
RATE, ROBERT R, 2221 E 56TH.67501  
663-6121  
47 M 1902 74 1M  
SCHEEL, BRADLEY J, 1100 N MAIN.67501  
663-2151  
48 M 1902 74 1M  
SCHROLL, JACK C, 2101 N WALORON.67501  
663-6121  
24 M 1902 49 08G  
SHAW JR, JAMES W, BOX 1646.67501  
662-7801  
40 M 1902 65 PATH  
SHEARS, ROBERT N, 1100 N MAIN.67501  
662-3364  
20 M 1902 44 PO  
SMITH, THOMAS WILLIAM, 521 WILEY 8LDG.67501  
662-4458  
43 M 1643 68 0TO  
STAFFORD, ROBERT W, 2101 N WALORON.67501  
663-6121  
43 M 2101 69 1M  
STENSAAS, CARL O, 401 WOLCOTT 8LOG.67501  
663-9147  
10 M 1902 38 0  
STOUT, JAMES M, 2101 N WALDRON.67501  
663-6121  
29 M 1902 55 FP



SUMNER, JOYCE R, 2027 N MADISON, 67501  
 663-0822  
 26 F 1902 51 ANES  
 TAYLOR, E J, 1100 N MAIN, 67501  
 663-2151  
 34 1902 61 FP  
 TISDALE, TERRANCE C, HUTCHINSON CLINIC PA, 67501  
 663-6121  
 36 M 6701 61 ORS  
 VON RUDEN, WILLIAM J, 2100 N WALDRON, 67501  
 662-3306  
 26 M 1611 52 GS  
 WEIDENSAUL, D N, 2101 N WALDRON, 67501  
 663-6121  
 50 M 1902 75 IM  
 WORTMAN, JACK A, 2101 N WALDRON, 67501  
 663-6121  
 34 M 1902 62 IM

**INDEPENDENCE—316**  
*(Southeast Kansas Society)*

BAIR, ALBERT E, PO BOX 925, 67301  
 331-7650  
 16 M 1902 44 GS  
 BARBERA, PORTER E, 800 WEST CHESTNUT, 67301  
 331-4400  
 19 M 4707 46 FP  
 BEAHM, EDGAR H, 307 PROFESSIONAL BLDG, 67301  
 331-2311  
 13 M 1902 44 FP  
 CHAPPUIE, WILLIAM G, 800 CHESTNUT WEST, 67301  
 331-5440  
 24 M 1902 51 FP  
 EMMOT, WILLIAM W, 800 WEST CHESTNUT, 67301  
 331-6350  
 45 M 1902 71 IM  
 EMPSON, CHARLES L, 400 N 14TH, 67301  
 331-6019  
 37 M 1902 68 FP  
 GAREY, WILLIAM JOHN, PO BOX 388, 67301  
 331-2200  
 44 M 6501 70 DR  
 KNUTH, KENNETH L, PO BOX 388, 67301  
 331-2200  
 22 M 1902 50 R  
 MYERS JR, EARL B, BOX 548, 67301  
 331-3420  
 32 M 2803 64 GS  
 CSBORN DO, ROBERT M, PO BOX 872, 67301  
 331-2070  
 M GP  
 ROBINSON, EDGAR L, 209 NORTH 6TH, 67301  
 331-1450  
 15 M 1902 42 FP  
 SHEIKH, MASCOB A, 900 W MYRTLE, 67301  
 331-2803  
 44 M 70402 66 GS  
 SUTTON, ROBERT E, PO BOX 1003, 67301  
 331-7700  
 46 M 1902 72 FP

**IOLA—316**  
*(Allen County Society)*

COPENING, TELL B, 305 N WASHINGTON, 66749  
 365-2134  
 43 M 1902 69 FP  
 DETAR, GEORGE F, 219 W MADISON, 66749  
 365-5175  
 28 M 1902 57 GS  
 DICK, WILLIS G, BOX 826, 66749  
 365-2131  
 13 M 512 41 GS  
 HANSON, DAVID C, 826 E MADISON, 66749  
 365-2131  
 46 M 512 73 FP  
 LENSKI JR, FRANCIS X, 206 S JEFFERSON, 66749  
 365-3901  
 26 M 1606 49 FP  
 MYERS, W EUGENE, 211 S STREET, 66749  
 365-3732  
 12 M 1902 46 FP  
 PEES, GERALD B, 219 W MADISON, 66749  
 365-5175  
 15 M 1902 43 GS

SCHMAUS, LYLE F, 202 E STREET, 66749  
 -  
 99 M 1803 26 OO

**JETMORE—316**  
*(Ford County Society)*

O'SHEA, JAMES G, BOX 545, 67854  
 357-8321  
 18 M 3901 48 FP

**JEWELL—913**  
*(Mitchell County Society)*

PLOWMAN, CARL W, 66949  
 428-3511  
 99 M 1606 26 FP

**JOHNSON — 316**  
*(Southeast Kansas Society)*

DAILEY, RONALD F, BOX 470, 67855  
 492-6230  
 31 M 1902 57 FP

**JUNCTION CITY—913**  
*(Geary County Society)*

BOLLMAN, CHARLES S, PO BOX 397, 66441  
 762-4575  
 41 M 3901 66 GS  
 BRETHOUR, LESLIE J, PC BOX 49, 66441  
 238-4151  
 13 M 3006 39 FP  
 BUNKER JR, HERBERT L, 1106 ST MARYS RD, 66441  
 238-5131  
 20 M 1606 45 FP  
 COPELAND, GARY A, GEARY COMMUNITY HOSP, 66441  
 762-2387  
 42 M 1902 68 R  
 LABHSETWAR, S A, MEDICAL ARTS BLDG, 66441  
 762-4147  
 39 F 49528 64 OBG  
 MACE, RONALD D, PO BOX 163, 66441  
 762-4884  
 42 M 3901 74 FP  
 MINNICK, CHARLES V, 602 NORTH JEFFERSON, 66441  
 762-2051  
 08 M 2105 35 FP  
 O'DONNELL, HARRY E, 1106 ST MARYS RD, 66441  
 762-4947  
 14 M 4113 42 FP  
 PATEL, MAHENDRA N, 1106 ST MARYS RD STE 206, 66441  
 762-2327  
 48 M 35207 74 IM  
 SCOTT, ALEX, 507 WEST 6TH, 66441  
 238-2518  
 23 M 5605 48 FP  
 WRIGHT, STANLEY E, 1106 ST MARYS RD, 66441  
 762-4884  
 47 M 3901 74 FP

**KANSAS CITY, KANSAS—913**  
*(Wyandotte County Society)*

ABDOU, NABIH I, KU MEDICAL CENTER, 66103  
 588-6586  
 34 M 33002 58 A  
 ALEXANDER, CHARLES E, 600 NEBRASKA, 66101  
 321-6670  
 43 M 401 70 OBG  
 ALEXANDER, CLYDE W, 1514 NORTH 5TH, 66101  
 281-4380  
 96 M 4707 23 FP  
 ALGIE, WILLIAM H, 907 N 7TH, 66101  
 371-5079  
 02 M 1902 27 IM  
 ALLEN, MAX S, K U MED CENTER, 66103  
 588-6988  
 11 M 1902 37 IM  
 ALLEN, TIMOTHY E, 9201 PARALLEL PKWY, 66112  
 334-4110  
 49 M 1902 R

ALLEN, WILLIAM R, 9201 PARALLEL PARKWAY,66112  
334-4110  
22 M 1902 46 R  
AMARE, MAMMO, KU MEDICAL CENTER,66103  
588-6031  
36 M 60501 61 1M  
ARAKAWA, KASUMI, KU MEDICAL CENTER,66103  
588-6670  
26 M 57211 53 ANE5  
ARENAL, ANGELA C, BETHANY HOSPITAL,66102  
281-8400  
38 F 35204 60 ANE5  
ASHER, MARC A, K U MED CENTER,66103  
588-6130  
36 M 1902 62 OR5  
ATKINS JR, FLOYD L, K U MED CENTER,66103  
588-6015  
43 M 5104 69 CO  
BAILIE, MICHAEL DAVID, KU MED CENTER,66103  
355-6339  
36 M 1720 64 PNP  
BARNHORST, DONALD A, KU MEDICAL CENTER,66103  
588-6107  
37 M 2834 63 CDS  
BASS JR, LEWIS N, 1975 N 5TH,66101  
321-2320  
21 M 1902 45 PD  
BATNITZKY, SOLOMON, K U MED CENTER,66103  
588-6835  
40 M 83601 64 DR  
BECKER, LESLIE E, 600 NEBRASKA,66101  
342-4010  
23 M 1003 46 U  
BERGIN, JAMES J, BETHANY MED CENTER,66102  
281-8767  
28 M 2407 54 1M  
BICHLMEIER, FRANKLIN G, 155 S 18TH,66102  
371-6800  
33 M 1902 58 COS  
BIGONGIARI, LAWRENCE R, KU MED CENTER,66103  
588-6800  
44 M 1611 69 DR  
BILLINGSLEY, THAD H, 155 S 18TH,66102  
321-3844  
41 M 1902 66 P  
BOGGAN, MICHAEL D, 155 S 18TH,66102  
371-6800  
40 M 1201 67 CDS  
BOLLINGER, ROBERT E, KU MEDICAL CENTER,66103  
588-6022  
19 M 1902 43 END  
BOLTON, VICTOR E, 155 SOUTH 18TH,66102  
371-2020  
24 M 1902 48 OBG  
BOSILJEVAC, FRED N, 155 S 18TH,66102  
-  
16 M 1902 44 OPH  
BRACKETT JR, CHARLES E, KU MED CENTER,66103  
588-6117  
20 M 3501 44 N5  
BRILLHART, MAXINE T, 1610 WASHINGTON BOULEVARD,66102  
321-4800  
15 F 1902 50 FP  
BROOKS, WILLIAM HENRY, 155 S 18TH,66102  
371-4343  
49 M 1902 74 R  
BROWN, JOHN V, 2903 W 42ND #5,66103  
432-5610  
58 M 1902  
BUBB, STEPHEN K, 155 S 18TH,66102  
371-6802  
48 M 1902 74 OR5  
BURGER, WILLIAM E, 355 NEW BROTHERHOOD BLDG,66101  
371-1017  
21 M 3006 51 G5  
CALDERON, JAIME, 4631 ORVILLE,66102  
596-1185  
39 M 26401 66 1M  
CAMERON, WILLIAM J, KU MEDICAL CENTER,66103  
588-6200  
29 M 2501 54 OBG  
CARLIN, JAMES WILLARD, KU MED CENTER,66103  
588-6670  
51 M 1902 76 ANE5  
CARPENTER, PAUL R, 155 SOUTH 18TH,66102  
371-6800  
24 M 1902 50 T5  
CHALIAN, ALEXANDER R, 2648 MINNESOTA AVENUE,66102  
-  
03 M 3509 37 00  
CHANG, C H JOSEPH, KU MED CENTER,66103  
588-6807  
29 M 58301 53 R

CHIN, TOM D, KUMC - HUMAN ECOLOGY DEPT,66103  
588-7175  
22 M 2501 43 1D  
CHO, CHENG T, K U MED CENTER,66103  
588-6302  
37 M 38501 62 PD  
CHONKO, ARNOLD M, KU MED CENTER,66103  
588-6969  
43 M 3840 69 NEP  
CHUN, CHUNG S, K U MED CENTER,66103  
588-6324  
30 F 58301 53 PD  
COALE, LLOYD H, 5020 GREELEY,66104  
-  
13 M 1902 43 00  
COHEN, SELWYN A, BOX 694 KU MED CENTER,66103  
588-6136  
49 M 83601 73 PS  
COOK, JAMES D, KU MED CENTER,66103  
588-6031  
36 M 6505 60 HEM  
COOKE, ALLAN R, KUMC DEPT OF MED,66103  
588-6990  
36 M 14303 58 GE  
COX III, IRA L, 155 SOUTH 18TH,66102  
371-4343  
43 M 1902 68 DR  
COX JR, WALLACE F, 4631 ORVILLE,66102  
287-3600  
30 M 1902 56 GS  
CROCKETT, CHARLES A, 155 S 18TH,66102  
342-2200  
19 M 401 44 OPH  
CULP, LOUIS M, 1645 WASHINGTON BLVD,66102  
371-1077  
24 M 1902 53 FP  
CURTIS, MIRJANA R, KU MED CENTER - OB/GYN,66103  
588-6237  
46 F 95702 69 OBG  
DARR, RICHARD B, 147 APACHE TRAIL W,66106  
676-2214  
42 M 3401 70 1M  
DAVIS, CHRISTOPHER G, 219 HURON BLDG,66101  
321-9313  
09 M 1902 39 FP  
DAY, HUGHES W, BETHANY MED CENTER,66102  
281-8856  
15 M 1902 39 1M  
DE SMET, ARTHUR AUGUST, KU MED CENTER - DIAG RAD,66103  
588-6800  
47 M 2501 72 DR  
DEITZ, MICHAEL R, 155 S 18TH,66102  
342-2222  
32 M 4101 58 OPH  
DEMOTT, WAYNE R, PROVIDENCE-ST MGT HLTH CT,66112  
334-2500  
34 M 4002 59 PATH  
DIALLO, GASTON I, 600 NEBRASKA,66117  
281-2888  
35 M 86905 64 GE  
DICK, ARTHUR R, KU MEDICAL CENTER,66103  
588-6985  
34 M 2301 65 N  
DIEDERICH, DENNIS A, K U MEDICAL CENTER,66103  
588-6981  
36 M 2834 61 1M  
DONNELLY, F MICHAEL, PROVIDENCE-ST MGT HLTH CT,66112  
334-2500  
48 M 1902 74 ANE5  
DRAINE, QUIDA D, KU MED CENTER AMBUL CARE,66103  
588-3974  
48 F 2802 75 1M  
DUJOVNE, CARLOS A, K U MED CENTER,66103  
588-6026  
37 M 13201 61 CP  
DUNN, MARVIN I, KU MED CENTER,66103  
588-6015  
27 M 1902 54 CD  
EGEA, FERNANDO M, 8919 PARALLEL PARKWAY,66112  
334-3400  
37 M 13206 62 N  
ENRIQUEZ JR, ROMAN S, 510 SOUTHWEST BLVD,66103  
262-6068  
48 M 74801 72 1M  
FABIAN, CAROL J, K U MED CENTER,66103  
588-6029  
46 F 1902 ON  
FITZPATRICK, M ROBERT, 1610 WASHINGTON BLVD,66102  
321-4800  
20 M 1803 44 FP  
FLOERSCH, HUBERT M, 155 S 18TH,66102  
371-2020  
08 M 1902 35 OBG



FORET, JOHN D, KU MED CENTER, 66103  
 588-6147  
 26 M 1602 53 U  
 FOX, DEANNA K, K U MED CENTER, 66103  
 588-6670  
 48 F 1902 74 ANES  
 FOX, HOWARD A, K U MED CENTER, 66103  
 588-6337  
 33 M 3501 62 PO  
 FRANCISCO, W DAVID, 155 S 18TH, 66102  
 371-6802  
 21 M 1902 44 ORS  
 FRIESEN, STANLEY R, KU MED CENTER, 66103  
 588-6108  
 18 M 1902 43 GS  
 GERJARUSAK, PRAPAS, 8919 PARALLEL SUITE 208, 66112  
 788-9604  
 46 M 89101 71 IM  
 GILHOUSEN, FREDERIC M, 1029 N 32ND, 66102  
 281-5252  
 40 M 1902 66 ORS  
 GILMORE, CLARENCE A, 600 NEBRASKA, 66101  
 321-6670  
 31 M 4707 60 OBG  
 GINSBERG, BRENT W, KU MED CENTER-MEDICINE, 66103  
 588-3050  
 50 M 3501 72 IM  
 GIRON JR, LOUIS T, K U MED CENTER DEPT OF N, 66103  
 588-6970  
 43 M 2802 68 N  
 GODFREY, WILLIAM A, KU MED CENTER, 66103  
 588-6600  
 38 M 1902 65 OPH  
 GOERTZ, KENNETH K, 222 HC MILLER KUMC, 66103  
 588-6311  
 50 M 1902 75 PD  
 GOERTZ, LEO R, 155 S 18TH ST, 66102  
 371-4343  
 22 M 1902 52 R  
 GOODWIN, DONALD W, KU MED CENTER, 66103  
 588-6402  
 31 M 1902 64 P  
 GOTO, HIROSHI, KUMC - ANES DEPT, 66103  
 588-6670  
 42 M 57241 67 ANES  
 GRADY, KENNETH L, 155 S 18TH, 66102  
 321-3844  
 36 M 1902 69 P  
 GRANTHAM, JARED J, K U MED CENTER, 66103  
 588-6983  
 36 M 1902 62 NEP  
 GREENBERGER, N J, KU MEDICAL CENTER, 66103  
 588-6001  
 33 M 3806 59 IM  
 GRUENDEL, RICHARD A, 1029 N 32ND, 66102  
 281-5252  
 29 M 1902 55 ORS  
 GRUENDEL, VIRGINIA T, 6926 GARFIELD, 66102  
 299-2787  
 30 F 1902 55 FP  
 HALL III, THOMAS BRYAN, KU MED CENTER, 66103  
 588-6400  
 43 M 2802 69 P  
 HANCOCK, ALAN C, 9201 PARALLEL, 66112  
 299-1474  
 35 M 1902 65 FP  
 HARA, GLENN S, KU MED CENTER, 66103  
 588-6200  
 43 M 502 69 OBG  
 HARDIN, CREIGHTON A, KU MED CENTER, 66103  
 588-6106  
 18 M 5605 43 GS  
 HART, KELLY Z, 155 S 18TH, 66102  
 371-4343  
 50 M 1902 75 DR  
 HART JR, PAUL V, PO BOX 4187, 66104  
 299-2069  
 50 M 3006 76 IM  
 HARTMAN, CHARLES R, K U MED CENTER, 66103  
 588-6111  
 37 M 1902 66 IM  
 HARTMAN, GERALD V, KUMC, 66103  
 588-6815  
 20 M 1902 45 TR  
 HENNING JR, HAROLD JCHN, 4116 800TH, 66103  
 55 M 1902  
 HERMRECK, ARLO S, K U MED CENTER, 66103  
 588-7232  
 38 M 1902 65 GS  
 HINTHORN, DANIEL R, KL MED CENTER, 66103  
 588-6035  
 41 M 1902 67 IM  
 HITCHCOCK, C THOMAS, 155 SO 18TH SUITE 200, 66102  
 371-2900  
 M 1902 78 GS  
 HOADLEY, WILLIAM D, KU MED CENTER-MEDICINE, 66103  
 588-1250  
 31 M 1902 56 IM  
 HODGES, GLENN R, K U MED CENTER, 66103  
 588-6035  
 41 M 1602 67 IO  
 HOLDCRAFT, JACQUELYNE, 4631 ORVILLE SUITE 203, 66102  
 321-1161  
 36 F 2105 63 ENT  
 HOLMES, FREDERICK F, KUMC, 66103  
 588-6987  
 32 M 5404 57 IM  
 HOLMES, GRACE E, KUMC, 66103  
 588-6325  
 32 F 5404 57 PD  
 HOLMES, JOHN A, 155 S 18TH, 66102  
 47 M 1902 77 IM  
 HOOGSTRATEN, BARTH, K U MED CENTER, 66103  
 588-6029  
 24 M 66001 55 ON  
 HORTON, WILLIAM A, K U MEDICAL CENTER, 66103  
 588-6043  
 45 M 1902 71 IM  
 HUERTER, QUENTIN C, WYANDOTTE MED BLOG STE 226, 66112  
 299-8800  
 31 M 1902 59 OPH  
 HURWITZ, ARYEH, KU MED CENTER, 66103  
 588-6026  
 36 M 2802 61 IM  
 IBARRA, RICHARD C, 754 PACIFIC, 66101  
 342-3969  
 26 M 64902 57 FP  
 INGRAM, JOHN E, 1428 S 32ND, 66106  
 384-1630  
 24 M 3006 56 FP  
 INNES, ROBERT C, PROVIDENCE-ST MGT HLTH CT, 66112  
 334-2500  
 25 M 2802 49 R  
 JACOBS, DAVID S, 8929 PARALLEL PARKWAY, 66112  
 334-2500  
 31 M 2501 56 PATH  
 JACOBS, RAE R, K U MED CENTER, 66103  
 588-6504  
 36 M 3506 62 ORS  
 JAHANIAN, DARYOUSH, 155 S 18TH, 66102  
 371-2020  
 40 M 51701 64 OBG  
 JAYARAM, MARANDAPALLI R, 8919 PARALLEL, 66112  
 492-6200  
 42 M 49509 65 PD  
 JEFFRIES, RHONDA DETERT, 436 STATE AVE, 66101  
 321-3055  
 51 F 1902 75 PD  
 JEWELL, WILLIAM R, KU MED CENTER, 66103  
 588-6112  
 35 M 1611 61 GS  
 JOHNSON, JOHN E, BETHANY MED CTR, 66102  
 281-8815  
 17 M 4706 43 PATH  
 JONES JR, HERMAN H, 600 NEBRASKA, 66101  
 342-4010  
 25 M 4707 54 GS  
 KALIVAS, JAMES T, KU MED CENTER, 66103  
 588-6028  
 38 M 502 63 D  
 KENNEDY, JAMES A, K U MED CENTER, 66103  
 588-6000  
 35 M 2834 61 IM  
 KEPES, JOHN J, K U MED CENTER - PATH DEP, 66103  
 588-7076  
 28 M 47301 52 PATH  
 KERBY, GERALD R, KU MED CENTER, 66103  
 588-6044  
 32 M 1902 58 PUD  
 KESTENBAUM, THELOA M, K U MED CENTER, 66103  
 588-6028  
 48 F 5101 73 D  
 KETCHERSIDE JR, WILLIAM J, 2918 S 9TH PLACE, 66103  
 55 M 1602 79 GS  
 KIM, JONG M, KUMC, 66103  
 588-6670  
 40 M 58302 64 ANES  
 KING, CHARLES R, K U MEDICAL CENTER, 66103  
 588-6200  
 47 M 1902 71 OBG  
 KIRCHNER, FERNANDO R, 155 S 18TH SUITE 270, 66102  
 371-7333  
 30 M 64901 55 OTO

KRANTZ, KERMIT E, KU MED CENTER,66103

588-6201  
23 M 1606 48 OBG

KWEE, SIOE T, PROVIDENCE-ST MGT HLTH CT,66112

334-2500  
36 F 1720 63 PATH

KYNER, JOSEPH L, KU MED CENTER,66103

588-5554  
34 M 1902 60 END

LAI, CHI-WAN, K U MED CENTER DEPT OF N,66103

588-6014  
44 M 38502 69 N

LAING, ROBERT R, 155 S 18TH ST,66102

371-4301  
37 M 1643 61 GE

LANSKY, LESTER L, K U MED CENTER,66103

588-6300  
33 M 2604 65 CHN

LANSKY, SHIRLEY B, K U MED CENTER,66103

588-6400  
35 F 2604 60 CHP

LAVIN, MARK J, KU MED CENTER - ANES DEPT,66103

588-6670  
51 M 1902 76 ANES

LAYBOURNE JR, PAUL C, KU MED CENTER,66103

588-6475  
19 M 3509 44 CHP

LEE, JAE M, 4631 ORVILLE - SUITE 109,66102

677-3555  
40 M 58302 65 GS

LEE, KYO R, KUMC,66103

588-6800  
33 M 58302 59 R

LEE JR, JAMES G, 155 S 18TH,66102

371-2330  
18 M 1902 44 OBG

LEMOINE JR, ALBERT N, K U MED CENTER,66103

588-6600  
18 M 2802 43 OPH

LEO, WILLIAM A, K U MED CENTER,66103

588-6109  
22 M 1902 48 GS

LEVINE, ERROL, K U MED CENTER,66103

588-6800  
41 M 83601 64 DR

LIEBERMAN, BRUCE IRWIN, KU MED CENTER,66103

588-6300  
49 M 3819 74 PD

LIN, JAMES T Y, K U MED CENTER DEPT OF N,66103

588-6042  
47 M 38502 72 N

LINDSLEY, CAROL B, K U MED CENTER,66103

588-5907  
41 F 5404 68 PD

LINDSLEY, HERBERT B, K U MED CENTER,66103

588-6008  
40 M 1902 66 RHU

LINSHAW, MICHAEL A, K U MED CENTER,66103

588-6300  
40 M 4109 66 PD

LISKOW, BARRY IRWIN, KU MED CENTER DEPT OF PSY,66103

588-6412  
43 M 3501 68 P

LIU, CHIEN, K U MED CENTER,66103

588-6035  
21 M 24217 47 ID

LLOYD, HARVEY L, 3200 STRONG AVE,66106

831-1111  
08 M 1803 36 FP

LOTITO, CARLOS A, 4631 ORVILLE,66102

596-1185  
29 M 13201 56 IM

LOWMAN, JAMES T, KUMC,66103

588-5701  
31 M 401 58 PD

LUKERT, BARBARA P, KU MED CENTER,66103

588-5554  
34 F 1902 60 END

LYNCH, SEAN R, KU MED CENTER,66103

588-6031  
38 M 83601 61 HEM

MACARTHUR, RICHARD IAN, KUMC 39TH AT RAINBOW,66103

588-6100  
46 M 1902 73 GS

MAGRINA, JAVIER F, K U MED CENTER OBG DEPT,66103

588-6244  
49 M 84701 68 OBG

MANGOLD, JOEL VOYCE, KU MED CENTER,66103

588-6670  
50 M 1902 76 ANES

MANI, MANI M, KUMC,66103

588-6136  
37 M 49527 60 PS

MANSFIELD, CARL M, K U MED CENTER - RM 117B,66103

588-7350  
28 M 1003 56 TR

MARTIN, JOSEPH P, 9201 PARALLEL,66112

334-1515  
49 M 1902 74 IM

MARTIN, NORMAN L, K U MED CENTER,66103

588-6800  
36 M 1902 62 DR

MARTINEZ, JOHN D, KU MED CTR DEPT OF MED,66103

588-6008  
48 M 1902 74 IM

MASTERS, FRANCIS W, KU MED CENTER,66103

588-6142  
20 M 3545 45 PS

MASTERSON, BYRON J, KUMC,66103

588-6216  
33 M 2802 58 GYN

MATHEWSON, HUGH S, KUMC,66103

588-6675  
21 M 1902 44 ANES

MATTIOLI, LEONE, KUMC,66103

588-6311  
32 M 56115 56 PDC

MC PHEE, MARK S, KU MED CENTER-MEDICINE,66103

588-6001  
51 M 1902 76 IM

MCCARTHY, ROBERT P, 155 S 18TH,66102

342-7233  
25 M 2834 53 U

MEBUST, WINSTON K, KU MED CENTER,66103

588-6148  
33 M 5404 58 U

MEDHAT, MOHAMED A, KU MED CENTER REHAB MED,66103

588-6787  
32 M 33002 54 RM

MEEK JR, JOSEPH C, KU MED CENTER,66103

588-6023  
31 M 1902 57 IM

MESINA, RCLANDO R, 1102 MINNESOTA AVE,66102

371-3829  
37 M 74801 61 GS

MINER JR, PHILIP B, K U MED CENTER,66103

588-6990  
46 M 702 71 GE

MOELLER, DONALD D, 155 S 18TH,66102

371-4301  
34 M 1902 60 GE

MOORE, WAYNE V, K U MED CENTER,66103

588-6336  
42 M 2604 70 PD

MORFFI, RAUL R, 1225 N 78TH,66112

287-8300  
25 M 27501 51 IM

MORRISON, RICHARD A, KU MED CENTER,66103

588-6815  
34 M 1902 60 TR

MULLEN SR, CLIFFORD J, 1828 WASH BLVD,66102

-  
98 M 3006 23 OO

NEFF, JAMES R, KU MED CENTER,66103

588-6198  
40 M 1902 66 ORS

NEIGHBOR, ERNEST G, 1420 S 42ND,66106

831-1100  
06 M 1902 33 FP

NEIGHBOR, ERNEST H, 1420 SOUTH 42ND ST,66106

831-1100  
40 M 1902 66 ORS

NEIGHBOR, GAYLORD P, 1420 SOUTH 42ND,66106

831-1100  
13 M 1902 41 FP

NELSON, WILLIAM PAUL, KU MED CENTER,66103

588-6015  
30 M 1002 56 CD

NIBBELINK, LARRY WAYNE, 155 S 18TH,66102

371-2330  
48 M 2803 75 OBG

NOBLE, MARK J, KU MED CENTER-UROLOGY,66103

588-6148  
49 M 1902 71 U

NOHE, PHILIP C, 266 NEW BROTHERHOOD BLDG,66101

321-4422  
17 M 1902 42 ORS

NORRIS, CHARLEY W, KUMC,66103

588-6700  
33 M 1902 64 OTO

NOTHNAGEL, ARNOLD F, 501 WESTVALE,66102

-  
15 M 1902 39 OO

NUNEZ, JULIAN, 4631 ORVILLE #209,66102

299-2088  
30 M 27501 60 FP



O'BOYNICK II, PAUL LEONARD, KU MED CENTER, 66103  
 588-5000  
 48 M 1902 73 NS  
 DLDFIELD, RAY W, 4631 ORVILLE, 66102  
 287-3537  
 45 M 1902 72 FP  
 OTHMER, ECKEHARD, K U MEDICAL CENTER, 66103  
 588-6440  
 33 M 40721 65 P  
 OXLER JR, JOHN EDWARD, 155 S 18TH, 66102  
 321-2974  
 46 M 1902 72 1M  
 PALMER, MARVIN M, 4137 N 110TH, 66109  
 727-6000  
 45 M 702 71 DBG  
 PALMERI, MARIA, 4631 ORVILLE, 66102  
 596-1185  
 49 F 13201 75 FP  
 PARDD, LILLIAN G, KU MED CENTER, 66103  
 588-5909  
 39 F 74807 62 PDN  
 PARDD, MANUEL P, K U MEDICAL CENTER, 66103  
 588-6464  
 35 M 74801 62 P  
 PAREKH, AJITKUMAR M, 6013 LEAVENWORTH RD, 66104  
 299-2069  
 47 M 49501 71 PUD  
 PARK, CHAN H, K U MEDICAL CENTER, 66103  
 588-6029  
 36 M 58302 62 1M  
 PARRA, MIGUEL D, 6013 LEAVENWORTH RD, 66104  
 299-2088  
 37 M 84710 64 FP  
 PASCHINO, ANTONIO R, 4631 ORVILLE #215, 66102  
 287-7100  
 22 M 13201 60 P  
 PATAK, RAMACHANDRA V, KU MEDICAL CENTER, 66103  
 588-6983  
 43 M 49509 66 N  
 PAZELL, JOHN A, 4631 ORVILLE, 66102  
 287-6464  
 40 M 2501 66 DRS  
 PECANA, MANUEL C, BETHANY MED CENTER, 66102  
 281-8896  
 45 M 74801 69 ANES  
 PERRY JR, LAWRENCE L, KUMC 39TH AT RAINBOW, 66103  
 588-6522  
 34 M 1902 59 FP  
 PETELIN, JOSEPH B, 3227 N 54TH, 66104  
 -  
 49 M  
 PETERS, GLENN R, 2211 N 88TH, 66109  
 -  
 12 M 1902 37 00  
 PIERCE, GEORGE E, KUMC - PD BOX 255, 66103  
 588-6115  
 33 M 2307 60 TS  
 PISCHKE, FRANK J, 155 SOUTH 18TH, 66102  
 321-1161  
 36 M 1902 62 DTD  
 POL, P ALBERT, 6013 LEAVENWORTH RD, 66104  
 287-7100  
 36 M 84710 67 P  
 PORTER, DAVID M, 4517 TRDUP, 66102  
 287-8800  
 39 M 4707 64 PD  
 POTTER, ROBERT L, 1969 N 33RD, 66102  
 321-0341  
 38 M 1902 64 1M  
 POWERS, G ROBERT, 8919 PARALLEL PKWY, 66112  
 299-1469  
 33 M 1902 65 FP  
 PREMSINGH, NALINI G, 4631 ORVILLE #202, 66102  
 596-2000  
 39 F 49508 65 CD  
 PRESTON, DAVID F, KU MED CENTER, 66103  
 588-6810  
 33 M 3841 59 NM  
 PRETZ, JAMES B, 1610 WASHINGTON BOULEVARD, 66102  
 342-2442  
 24 M 1902 47 FP  
 PRICE, HILTON I, KU MED CENTER - RAD DEPT, 66103  
 588-6831  
 49 M 83601 72 DR  
 PRICE, JAMES GORDON, K U MED CENTER, 66103  
 588-6510  
 26 M 702 47 FP  
 PROUD, G CNEIL, KU MEDICAL CENTER, 66103  
 588-6700  
 13 M 2802 39 OTO  
 PUGH, DAVID M, K U MED CENTER, 66103  
 588-6015  
 29 M 801 58 CD

QUINN, CHARLES E, 1 GATEWAY CTR 4TH & STATE, 66101  
 321-3355  
 43 M 4707 68 OBG  
 RANSON, KENNETH J, KU MED CENTER, 66103  
 588-6100  
 49 M 1902 74 GS  
 RECKLING, FREDERICK W, KUMC, 66103  
 588-6129  
 34 M 3545 59 ORS  
 REDDY, EASHWER K, K U MED CENTER - RAD DEPT, 66103  
 588-7350  
 44 M 49597 68 TR  
 REDFORD, JOHN W B, K U MED CENTER, 66103  
 588-6777  
 28 M 6501 53 PM  
 REEB, RONALD JOSEPH, 155 S 18TH, 66102  
 371-4343  
 46 M 3006 72 DR  
 REED, JAMES STEWART, K U MED CENTER, 66103  
 588-6019  
 46 M 3601 72 GE  
 REGIER, HENRY L, 2000 WASHINGTON BOULEVARD, 66102  
 -  
 81 M 1902 07 DO  
 RHODES, JAMES B, KU MEDICAL CENTER, 66103  
 588-6019  
 28 M 1902 58 GE  
 RHODES, MARTIN L, 155 S EIGHTEENTH, 66102  
 321-0341  
 47 M 1902 72 1M  
 RICE JR, FREDERICK A, 1029 N 32ND ST, 66102  
 281-5252  
 36 M 4812 63 ORS  
 RILEY, RAY B, 2020 ORVILLE, 66102  
 -  
 06 M 1902 36 CO  
 RISING, JESSE D, KU MEDICAL CENTER, 66103  
 588-4488  
 14 M 1902 38 1M  
 ROBINSON, DAVID W, KU MEDICAL CENTER, 66103  
 588-6136  
 14 M 4101 38 PS  
 ROBINSON, JOHN D, K U MED CENTER, 66103  
 588-6670  
 48 M 1902 74 ANES  
 ROBINSON, RALPH G, KU MEDICAL CENTER, 66103  
 588-6810  
 37 M 1902 62 NM  
 RODRIGUEZ, RAUL G, 6013 LEAVENWORTH RD, 66104  
 299-2525  
 42 M 26401 68 P  
 ROOK, LEE E, 4116 STRONG, 66106  
 831-2834  
 09 M 1902 38 FP  
 RDSANTHAL, STANTON J, K U MED CENTER, 66103  
 588-6800  
 46 M 1902 71 DR  
 RDTH, ALAN E, BETHANY HOSPITAL 51 N 12, 66102  
 281-8814  
 35 M 1902 62 PATH  
 RUBIN JR, BEN, 132 S SEVENTEENTH, 66102  
 371-2561  
 37 M 3005 61 PD  
 RUTH, WILLIAM E, K U MED CENTER, 66103  
 588-6044  
 26 M 1902 53 PUD  
 RYAN, MICHAEL J, 764 NEW BROTHERHOOD BLDG, 66101  
 342-7070  
 14 M 2834 37 OTO  
 SAVIN, VIRGINIA J, KU MED CENTER, 66103  
 588-6983  
 44 F 4112 70 1M  
 SCHIMKE, R NEIL, KU MED CENTER, 66103  
 588-6043  
 35 M 1902 62 1M  
 SCHDTLAND, EDWARD S, 1300 N 78TH STE 303, 66112  
 334-5250  
 36 M 86901 66 D  
 SCHREPFER, ROSEMARY, KU MED CENTER, 66103  
 588-6200  
 22 F 1902 47 OBG  
 SCHWEGLER, RAYMOND A, 8919 PARALLEL PKWY, 66112  
 492-6200  
 37 M 1902 63 CD  
 SCHWORM, CURTIS P, 155 SOUTH 18TH, 66102  
 371-4343  
 47 M 3005 73 DR  
 SERERES, EDGAR P, 662 NEW BROTHERHOOD BLDG, 66101  
 321-2501  
 15 M 1902 39 FP  
 SHERMAN, ROBERT P, 9201 PARALLEL AVE, 66112  
 334-0040  
 34 M 1902 63 PUD

SIFERS, EARL C. 155 S 18TH,66102  
371-2900  
24 M 1902 47 GS  
SIFERS, TIMOTHY M. 155 S 18TH,66102  
371-2900  
48 M 1902 74 GS  
SILVERS, ALVIN, 1702 SW BOULEVARD,66103  
236-9691  
18 M 1902 45 FP  
SKIKNE, BARRY S. KU MED CENTER,66103  
588-6031  
45 M 83601 61 HEM  
SMITH, STEPHEN D. K U MED CENTER,66103  
588-6300  
45 M 3006 71 PD  
SNODGRASS, WAYNE R. KU MED CENTER PED DEPT,66103  
588-6318  
45 M 1720 68 PD  
SOUCEK, CHARLES D. 155 S 18TH,66102  
371-4343  
31 M 3005 56 R  
SPAULDING, JOHN S. KU MED CENTER,66103  
588-5900  
29 M 1602 59 PD  
SPEER, LELAND. 1022 HCEL PARKWAY,66102  
-  
12 M 1902 36 OO  
STECHSCHULTE, DANIEL J. K U MED CENTER,66103  
588-6008  
36 M 2834 62 A  
STEELE, CLARENCE H. 255 BROTHERHOOD BLDG,66101  
321-1161  
14 M 1902 40 OTO  
STEINZEIG, SHERMAN W. 155 S 18TH,66102  
621-1151  
25 M 1902 52 CD  
STEPHENS, RONALD L. KUMC,66103  
588-6029  
39 M 1902 65 IM  
STUBBLEFIELD, CHARLES T. 155 S 18TH,66102  
371-2330  
32 M 1902 58 OBG  
TAYLOR, SARAH A. KU MED CENTER-STUDENT UN,66103  
588-6029  
50 F 1902 75 IM  
TAYLOR, THOMAS L. 155 S 18TH ST,66102  
371-2900  
40 M 1902 66 GS  
TEMPLETON, ARCH W. K U MEDICAL CENTER,66103  
588-6805  
32 M 3005 57 R  
THEROU, LEONA F. K U MEDICAL CENTER,66103  
588-6302  
41 F 6701 67 PD  
THOMAS, JAMES H. K U MED CENTER,66103  
588-5901  
41 M 2012 66 GS  
THOMAS, THOMAS V. 211 INDIAN SPRINGS MED BL,66102  
287-2600  
37 M 49549 61 CDS  
THOMPSON, DANNIE M. ONE GATEWAY CENTER,66101  
321-3355  
35 M 4707 64 OBG  
TRUEWORTHY, ROBERT C. KU MED CENTER,66103  
588-5701  
40 M 2802 66 PD  
UTLEY, JAMES HARMON. 51 N 12TH,66102  
281-8880  
51 M 1606 74 EM  
VAN THULLENAR, PHILIP A. BETHANY MED CENTER,66102  
281-8834  
31 M 2834 57 PATH  
VARGHESE, GEDRGE. K U MEDICAL CENTER,66103  
488-6798  
44 M 49509 69 PM  
VATS, TRIBHAWAN S. KUMC,66103  
588-5701  
40 M 49529 63 PD  
VELARDE, HUGO. 4601 ORVILLE AVE STE 14,66102  
287-8400  
M 64 GS  
VISSER, VALYA E. KU MED CENTER,66103  
588-6337  
47 F 1803 73 PD  
WADDELL, BILL D. 155 SOUTH 18TH,66102  
321-0386  
31 M 3901 56 IM  
WALKER, JACK D. KU MED CENTER,66103  
588-6522  
22 M 1902 53 FP  
WALKER, MAURICE A. 3214 STRONG AVE,66106  
831-1433  
04 M 1601 28 GS

WAXMAN, DAVID. K U MED CENTER,66103  
588-1207  
18 M 3515 50 IM  
WEIGEL, JOHN W. UROLOGY DEPT KU MED CTR,66103  
588-6148  
29 M 1902 54 U  
WELLER, ELIZABETH B. KU MED CENTER,66103  
588-6464  
49 F 60501 75 CHP  
WELLER, RONALD ALAN. KU MED CENTER - PSY DEPT,66103  
588-6464  
48 M 2802 74 P  
WILLIAMS JR. STERLING B. K U MEDICAL CENTER,66103  
588-6200  
41 M 401 73 OBG  
WINN, RANDALL S. KU MED CENTER - RADIOLOGY,66103  
588-6800  
51 M 1902 76 DR  
WINTER JR. CALVERT J. 132 S 17TH,66102  
371-2561  
22 M 1902 47 PD  
WISE III, JOSEPH EDWARD. 132 S 17TH,66102  
371-2561  
51 M 1902 76 PED  
WISNER JR. JOHN HENRY. 229 S EIGHTH,66101  
588-6431  
46 M 1902 76 P  
WOLF, KARL T. 621 NORTHRUP AVE,66101  
-  
14 M 1902 48 OO  
WONG, BERT Y. K U MED CENTER,66103  
588-6015  
40 M 801 65 CD  
WOOD, FRED M. KU MED CENTER,66103  
588-6144  
38 M 4706 62 ORS  
WRIGHT III, ROBERT W. 4606 CAMBRIDGE,66103  
588-6670  
50 M 1902 79 ANES  
WRIGHT JR. ROBERT W. 669 NEW BROTHERHDD BLDG,66101  
371-5344  
24 M 1902 48 GS  
ZAREMSKI, SHERMAN C. 4631 ORVILLE STE 209,66102  
596-1185  
33 M 1720 58 IM  
ZIEGLER, DEWEY K. KU MED CENTER,66103  
588-6985  
20 M 2401 45 N  
ZINN, THOMAS W. 155 S 18TH,66102  
371-4343  
41 M 1902 67 R

## KANSAS CITY, MO—816

ALLEN, MARK LYNN. 3720 WYOMING SUITE 3,64111  
-  
53 M 1902  
BELT, ROBERT JULIAN. 6724 TROOST,64131  
-  
45 M 702 71 MO  
BOUDET, ROBERT A. V A HOSP,64128  
861-4700  
36 M 1103 62 GS  
BROTHERS, MARY ELIZABETH. 2727 MAIN,64108  
-  
49 F 1902 74 GS  
CALKINS, W GRAHAM. V A HOSP,64128  
861-4700  
26 M 2501 50 GE  
CRONMEYER, RICHARD L. 444 GLADSTONE BLVD,66124  
-  
52 M 1902  
DAVIS JR, JAMES W. V A HOSP,64128  
861-4700  
33 M 4705 57 IM  
DIEHL, ANTONI M. 618 MEDICAL PLAZA,64111  
753-4414  
24 M 2604 47 PDC  
FESTOFF, BARRY W. VA HOSPITAL,64128  
861-4700  
40 M 1102 77 N  
GODFREY, ROBERT G. VA HOSP,64128  
861-4700  
27 M 1902 58 RHU  
HARD, BENJAMIN F. MOBAY CHEMICAL CORP,64120  
242-2525  
28 M 4802 55 OBG



ISERN, MERRILL, 1405 W 50TH TERR, 64112

281-8880

50 F 84706 77 EM

JOHNS JR, LEO E, VETERANS MED CENTER, 64128

861-4700

22 M 2101 45 PUD

JOHNSON, FREDERICK E, C/O MARY K BLOTT, 64112

-

92 M 2843 21 00

KINPORTS JR, EDWARD B, 2400 PERSHING RD STE 561, 64108

842-1950

46 M 3006 74 EM

LEWIS JR, H DANIEL, VETERANS MEDICAL CENTER, 64128

861-4700

32 M 5101 58 CD

LUETJE, CHARLES MARION, 2928 MAIN, 64108

561-4423

41 M 2803 67 OTO

MCALINNEY, PATRICK G, 2520 GRAND AVE APT 407, 64108

842-1950

49 M 53901 74 FP

CWENS, RICHARD L, 2600 COMMERCE TOWER, 64105

842-1146

24 M 3006 51 OM

PAYNE, J RALPH, 4460 ROCKHILL TERRACE, 64110

334-2500

40 M 1902 62 EM

POONAWALA, HUSENI E, 4400 BROADWAY SUITE 202, 64111

561-2025

33 M 49528 59 P

REDING, DOUGLAS J, 4206 GENESSEE, 64111

588-5000

54 M 1803 80 IM

SINGER, PHILIP A, V A HOSPITAL, 64128

861-4700

42 M 3545 69 N

SLEEPER, CAROL A, 20 E FOURTEENTH, 64142

-

33 F 1902 58 PATH

STILLIE, G DONALD, 7609 LOCUST, 64131

-

48 M 2878 78 RT

STOKES, ROBERT LEE, 924 W 34TH, 64111

281-8882

43 M 4804 74 EM

WIEGMANN, THOMAS B, VETERANS MED CENTER, 64128

-

43 M 40902 69 NEP

**KINGMAN—316**  
(Pratt-Kingman Society)

BLOOM, L THEIL, 80X 496, 67068

-

32 M 1902 57 R

BOYER, ROBERT E, 760 AVENUE D WEST, 67068

532-5145

36 M 1902 63 FP

**KINSLEY—316**  
(Edwards County Society)

ATWOOD, M DALE, PO BOX 269, 67547

659-2114

19 M 1902 51 FP

MCKIM, W LYNN, 109 WEST 8TH, 67547

659-2137

33 M 1902 59 FP

SCHNOEBELE, RENE E, 807 EAST 4TH, 67547

659-2141

16 M 3901 40 FP

**KIOWA—316**  
(Tri-County Society)

CHRISTENSEN, MARION D, 802 DRUMM, 67070

825-4121

25 M 3901 52 FP

**LA CROSSE—913**  
(Central Kansas Society)

BHARGAVA, ASHOK KUMAR, 208 FAIRWAY DR, 67548

653-2185

37 M 49547 64 FP

**LANSING—913**  
(Leavenworth County Society)

SNOW, DONALD L, HOLIDAY PLAZA, 66043

727-3204

21 M 64901 54 08G

**LARNED—316**  
(Pawnee County Society)

BRENNER, WILLIAM R, 804 CARROLL, 67550

285-3133

15 M 3006 39 FP

CRAM JR, OLE R, 722 MANN, 67550

285-2141

18 M 1902 43 FP

DAVIS, DAVID H, 815 W 6TH, 67550

-

04 M 1902 30 00

EWING, THOMAS D, 804 CARROLL, 67550

285-3133

22 M 1902 46 FP

PARAMESH, JAYA, LSH BOX 89, 67550

285-2131

32 F 49608 55 GP

SHAH, MIAN, SHAH CLINIC, 67550

285-3173

32 M 70403 58 GS

SHAH, NASREEN, SHAH CLINIC, 67550

285-3173

39 F 70409 62 08G

SHEPARD, LEROY W, 603 W 5TH, 67550

-

04 M 3006 30 00

SMITH, JOHN D, 804 CARROLL, 67550

285-3133

22 M 3901 51 FP

**LAWRENCE—913**  
(Douglas County Society)

ANDERSON, WINSTAN L, 3603 W 10TH ST, 66044

-

09 M 1902 34 00

AUCHARD, VIRGIL M, 2126 LOUISIANA, 66044

-

89 M 1902 23 00

BAILEY, WILLIAM A, PO BOX 127, 66044

843-9125

40 M 1902 66 ORS

BELOT JR, MONTI L, LAWRENCE NATIONAL BK BLDG, 66044

843-6340

13 M 1902 40 FP

BIERI, PETER V, 1112 W SIXTH ST, 66044

841-5217

45 M 1902 71 ENT

BISHOP, RODNEY LEE, 346 MAINE, 66044

842-7200

49 M 1902 75 IM

BITTENBENDER, LEE R, 930 IOWA, 66044

842-7001

46 M 1902 72 D

BLAIR, T RICHARD, 404 MAINE STE 3, 66044

842-3635

34 M 1902 60 IM

BOYDEN, MARY S, MEDICAL ARTS BLDG, 66044

842-3778

14 F 2604 38 PDA

BRANSON, VERNON L, 346 MAINE, 66044

842-4477

17 M 1902 42 PD

BRUNER, STEVEN C, 500 ROCKLEDGE, 66044

841-6540

46 M 1902 72 FP

BRUNFELDT, JOAN KRAUS, 404 MAINE, 66044

842-3635

52 F 1902 77 IM

BUCK JR, HENRY W, 1112 W SIXTH, 66044

841-9200

34 M 1902 60 08G

CARNAHAN, ROBERT L, 1112 W SIXTH SUITE 112, 66044

841-4310

42 M 1902 70 IM

CHEDIAK, ELIAS, 601 MISSOURI, 66044

841-7430

39 M 84704 65 P

CLINTDN, DALE L, 15 E SEVENTH SUITE 103,66044

841-5716

21 M 1902 54 GP  
CULVER, WARREN T, 2500 W 6TH,66044

842-4178

20 M 3508 46 OPH

DAHL, DENNIS R, 2927 HARVARD RD,66044

843-4455

30 M 1902 61 FP

DOUGLAS, JOSEPH MAHLD, 930 IDWA,66044

841-3535

39 M 1902 65 P

DUNLAP, RICHARD L, MEDICAL ARTS CENTER,66044

842-4344

12 M 3005 37 ENT

FRIESEN, DALE, 2500 WEST 6TH,66044

842-7026

47 M 1902 74 ANES

GILLES, HELEN M, MED ARTS CENTER,66044

842-4477

22 F 1902 45 PD

GDDWIN, PHILLIP A, 500 ROCKLEDGE,66044

841-6540

28 M 1902 55 ANES

HAGGAN, MARGARET E, WATKINS MEM HD5P,66044

843-4455

F FP

HASSELE III, JAMES E, 601 MISSOURI,66044

841-7430

35 M 4706 59 P

HATTON, DONALD W, 404 MAINE ST,66044

842-3635

42 M 1902 68 IM

HERMES, RICHARD L, THE MEDICAL ARTS CENTER,66044

843-0677

15 M 4112 39 DBG

HIEBERT, DAVID L, 1112 W SIXTH,66044

841-3211

36 M 1902 61 R

HIRO, WAYNE E, 645 COUNTRY CLUB TERR,66044

842-4300

26 M 1902 50 TS

HORTON, BILL GATE, 346 MAIN,66044

841-1028

47 M 1902 74 DPH

HUGHES, ROBERT WALTER, MEDICAL ARTS BLDG,66044

843-1374

27 M 1902 54 FP

INGHAM JR, H LAIRD, 404 MAINE,66044

842-3635

45 M 3901 70 IM

JONES, H PENFIELD, MED ARTS CENTER,66044

842-0211

06 M 2401 31 GS

JOSEPH, HOWARD F, DOCTORS BUILDING,66044

843-3981

26 M 1902 51 U

LEARNED, GEORGE R, 401 ARKANSAS,66044

843-5502

22 M 1902 55 GS

LESSENDEN, GLENN A, MED ARTS BLDG,66044

843-6233

24 M 1902 48 FP

LVELAND, G CHARLES, 346 MAINE,66044

842-4477

47 M 1902 73 PD

MADSEN, GLENN L, 1112 W SIXTH,66044

841-3211

38 M 3005 65 R

MANAHAN, G EUGENE, MED ARTS CENTER,66044

842-0211

19 M 1902 44 GS

MITCHELL, ALEX C, 1626 W 20TH,66044

843-4739

18 M 1902 50 PH

MDDRELL, CARL A, 404 MAINE,66044

843-3680

45 F 1902 71 PATH

MDNCKTON, LAURANCE A, 1112 W SIXTH SUITE 204,66044

843-2010

48 M 1902 74 GS

NELSDN, RICHARD D, 935 IDWA,66044

843-0921

11 M 1001 41 FP

DELSCHLAGER, RONALD D, 1112 W SIXTH,66044

841-3211

43 M 1902 69 R

DLSDN, CARL E, 935 IDWA,66044

842-9911

17 M 1611 46 FP

ORCHARD, RICHARD A, 1112 W SIXTH SUITE 212,66044

841-2280

41 M 2802 68 OPH

OWEN, GARRY D, 1112 W SIXTH,66044

841-9200

37 M 1902 63 DBG

PEES JR, GERALD BDYD, 1112 W SIXTH SUITE 210,66044

843-5160

45 M 1902 71 IM

PRAEGER, MARK A, 1112 W SIXTH SUITE 204,66044

843-2010

42 M 1902 68 GS

PRICE JR, LAURANCE W, C/D LAWRENCE CLINICAL LAB,66044

843-3680

33 M 1902 59 PATH

REED, RALPH R, 404 MAINE,66044

842-3635

27 M 1902 53 IM

REESE, JOHN L, 346 MAINE,66044

842-6644

35 M 1902 61 GS

REITH, PAUL, XX107 WESTDN SQ MEADWBRO,66044

-

M

RDBERTS, RICHARD S, 308 MAINE,66044

843-6137

19 M 2802 44 GS

SANDERS, J ALAN, LAWRENCE MEMORIAL HC5P,66044

842-2083

29 M 1902 60 PATH

SCHNOSE, GREGORY D, 1112 W SIXTH SUITE 210,66044

843-5160

51 M 1902 76 IM

SCHROEDER, SYDNEY D, WATKINS MEMORIAL HD5P,66044

864-4045

18 M 1902 44 P

SCHWEGLER, RAYMOND A, MEDICAL ARTS CENTER,66044

843-4455

07 M 2604 31 DBG

TUCKER, DONALD R, 1517 INDIAN WELLS CT,66044

354-5100

31 M 1902 57 IM

TUCKER, VIRGINIA L, 1517 INDIAN WELLS CT,66044

842-9313

30 F 1902 57 PD

VERNDN, MARY C, 500 ROCKLEDGE,66044

841-6540

52 F 1902 77 FM

WELL, MICHAEL A, 944 KENTUCKY,66044

843-3981

41 M 1606 67 U

WERTZBERGER, JOHN, PC BOX 127,66044

843-9125

36 M 1902 63 ORS

WERTZBERGER, KENNETH LYNN, 1211 W SIXTH,66044

843-9125

47 M 1902 73 ORS

WILCOX SR, HOWARD L, MEDICAL ARTS CENTER,66044

843-0677

18 M 3520 44 OBG

WILLMANN, MARTIN, 2615 ORCHARD LN,66044

843-4455

26 M 1902 57 IM

## LEAVENWORTH—913

(Leavenworth County Society)

AL-BAGHAL, MOHAMMAD, 520 SIXTH AVE,66048

682-6661

45 M 87501 72 U

ANWAR, M ZIA, 109 DELAWARE,66048

651-2977

39 M 11801 67 IM

BARRY, DAVID R, 500 EISENHOWER RD,66048

727-6000

42 M 1902 68 FP

BENNETT, CHARLES A, 1009 S BROADWAY,66048

-

96 M 1902 25 DD

CENAC, MARK T, 500 EISENHOWER RD,66048

727-6000

27 M 401 49 GS

CDMBS, G RALPH, 510 FIFTH,66048

-

79 M 4101 02 DD

CDMBS, PETER S, 213 DELAWARE,66048

682-0242

14 M 4101 41 IM

DE DUZA, DERRICK J, 520 SIXTH AVE,66048

682-6661

43 M 49501 66 GS

DUYSAK, SAMI, 520 6TH AVE,66048

682-6661

22 M 90201 47 IM



GERBER, HARRY A, 605 N 6TH, 66048  
682-3893  
96 M 5606 30 FP  
GRAHAM, J MALCOLM, 500 EISENHOWER RD, 66048  
727-6000  
28 M 3840 54 PD  
GRAHAM, KENNETH L, 500 EISENHOWER RD, 66048  
727-6000  
21 M 3840 45 GS  
GRAHAM, THOMAS W, 500 EISENHOWER RD, 66048  
727-6000  
26 M 3840 50 1M  
GRISOLIA, ANORES, 424 WALNUT ST, 66048  
682-5400  
27 M 84708 50 ORS  
JDHLER, TERRY HARTWIG, 500 EISENHOWER RD, 66048  
727-6000  
40 M 2802 67 FP  
JDHNSDN, PAUL O, 520 SIXTH AVE, 66048  
682-6661  
36 M 1902 61 FP  
KAVI, NAGESH G, PO BOX 1204, 66048  
682-2000  
32 M 49509 58 1M  
MCCOLLUM, MARY B, 607 SHAWNEE, 66048  
651-6566  
43 F 4804 68 P  
MCCOLLUM, WILLIAM B, 3601 S FOURTH, 66048  
682-6661  
41 M 1902 66 TS  
MCKEE, RICHARD S, 1210 S BROADWAY, 66048  
682-1023  
05 M 1902 35 ANES  
MERRITT, W HENRY, 520 SIXTH AVE, 66048  
682-6661  
14 M 702 39 GS  
MILLS, VERNON A, 520 SIXTH AVE, 66048  
682-6661  
51 M 1902 77 PEO  
PARKER, ROBERT W, 500 EISENHOWER RD, 66048  
727-6000  
45 M 1902 71 FP  
PRAY, CLAUDIA M, 529 DELAWARE, 66048  
682-4777  
52 F 1902 74 PO  
RABE, MELVIN A, 520 SIXTH AVE, 66048  
682-6661  
14 M 1902 37 GS  
TAMBURINI, MARIO, 2605 S 16TH, 66048  
682-8950  
16 M 13201 49 R  
VORHEES, CARROLL O, 520 SIXTH AVE, 66048  
682-6661  
25 M 1902 52 FP  
VORHEES, GORDON S, 520 SIXTH AVE, 66048  
642-6661  
12 M 1902 39 1M

**LEBO—316**  
(*Flint Hills Society*)

HUNTER, KENNETH R, 66856  
256-2565  
07 M 1902 39 FP

**LENORA—913**  
(*Northwest Kansas Society*)

STEICHEN, EDWARD F, 67645  
—  
05 M 1601 31 FP

**LIBERAL—316**  
(*Seward County Society*)

ALLEN, RAY E, 2 PLAZA DR, 67901  
624-5691  
37 M 1902 64 1M  
CAEOD, CARMELITA D, PO BOX 1643, 67901  
624-1651  
41 F 74801 63 R  
CAMPION, WOODROW M, 121 W THIRD, 67901  
624-2594  
13 M 1902 39 1M  
GRIMES, I ROSS, 222 W 15TH, 67901  
624-1676  
27 M 3901 54 TS

HARRIS, NORVAN D, 222 W 15TH, 67901  
624-3811  
20 M 1902 44 OBG  
HOLCOMB, WILLIAM M, 15 E 11TH, 67901  
624-2252  
31 M 3901 56 GS  
KCONS, JESS W, 1210 N WASHINGTON, 67901  
624-3841  
27 M 1902 57 DPH  
NEVINS, RICHARD L, PO BOX 1824, 67901  
624-1841  
47 M 3901 73 FP  
PALMER JR, H C, 2 PLAZA DRIVE, 67901  
624-5691  
36 M 1902 63 1M  
PROCHAZKA, OTTO F, BOX 1809, 67901  
—  
12 M 1902 38 00  
RATHBUN, EDWIN O, 610 W 11TH, 67901  
624-1841  
36 M 1902 62 FP  
REESE, JACK O, 15 E 11TH, 67901  
624-6226  
32 M 1902 57 FP  
SEAGD, CHARLOTTE L, 1031 N KANSAS, 67901  
624-1625  
35 F 1720 60 PO  
WADE, THEODORE E, 318 N LINCOLN, 67901  
—  
04 M 512 30 00  
ZAINALI, ASSADOLLAH, BOX 1340, 67901  
624-6211  
46 M 51701 72 R

**LINDSBORG—913**  
(*McPherson County Society*)

FREORICKSON, DUANE E, 121 W LINCOLN, 67456  
227-3371  
39 M 1902 66 FP  
FULLER, OERYL O, 121 W LINCOLN, 67456  
227-3371  
25 M 1902 50 FP  
MURFITT, MALCOLM C, 231 N MAIN, 67456  
227-2732  
13 M 801 41 FP

**LINWOOD—913**  
(*Leavenworth County Society*)

FUNK, EDWARD O, BOX 144 A-1, 66052  
—  
04 M 1902 41 ANES

**LYNDON—913**  
(*Franklin County Society*)

STDUT, NILES M, 66451  
828-4521  
16 M 1902 50 FP

**LYONS—316**  
(*Rice County Society*)

GRIMES, JAMES T, 1221 W NOBLE, 67554  
257-5124  
27 M 1902 53 FP  
SIEMENS, RICHARD A, 1221 W NOBLE, 67554  
257-5124  
30 M 1902 59 FP  
WOLF, CURTIS V, 1221 W NOBLE, 67554  
257-5124  
37 M 1902 64 FP

**MADISON — 316**  
(*Flint Hills Society*)

BROWNING, WILLIAM R, 8DX 548, 66860  
437-2140  
44 M 1902 73 FP

**MANHATTAN—913**  
(*Riley County Society*)

BAKER, RICHARD B., 1133 COLLEGE, 66502  
537-4200  
42 M 4113 6B ORS  
BALL, RALPH G., 215 S DELAWARE, 66502  
—  
03 M 1902 27 OO  
BASCOM, GEORGE S., 1133 COLLEGE, 66502  
539-6574  
27 M 2401 52 GS  
BOESE, KENNETH M., 1133 COLLEGE AVE., 66502  
776-4744  
25 M 1902 56 FP  
BROWN, ROBERT M., 1133 COLLEGE, 66502  
532-6544  
31 M 1902 63 FP  
BURDICK, BRUCE M., 117 S FIFTH, 66502  
776-9411  
25 M 512 53 P  
CATHEY, ROBERT H., 1133 COLLEGE AVE., 66502  
537-4990  
42 M 1902 68 O  
CRANE, CHERBERT, 1133 COLLEGE, 66502  
537-9030  
22 M 3520 46 PO  
COURKEE, WILLIAM R., 1133 COLLEGE AVE., 66502  
776-4744  
23 M 1902 45 1M  
FAIRCHILD, JOHN A., 756 COLLEGE HTS CIR., 66502  
539-4041  
14 M 3006 41 OO  
FISCHER, REX R., 1133 COLLEGE, 66502  
776-1400  
34 M 3005 60 OBG  
FISHER, RONALD M., N CENTRAL GUIDANCE CENTER, 66502  
234-9566  
50 M 3305 76 P  
FREEMAN, FRED A., MANHATTAN MED CENTER, 66502  
537-8710  
42 M 1902 69 U  
GARDNER, JAMES O., 1133 COLLEGE AVE., 66502  
537-4940  
43 M 2834 71 1M  
HEASTY, ROBERT G., 1133 COLLEGE, 66502  
539-5322  
11 M 3519 38 OBG  
HOSTETTER, PHILIP H., 821 POYNTZ, 66502  
537-2544  
17 M 1902 42 FP  
HUNTER JR., JAMES S., 1133 COLLEGE, 66502  
539-5501  
18 M 2301 41 OBG  
JUBELT, HILBERT P., 1133 COLLEGE, 66502  
537-9030  
19 M 1611 43 PO  
KALOOR, RICHARD H., PC BOX 128, 66502  
539-5363  
40 M 2401 66 PATH  
KEMPTHORNE, CHARLES R., 519 N 11TH, 66502  
—  
03 M 5605 32 OO  
KIRK, THOMAS E., 206 SOUTHWIND, 66502  
537-0655  
44 M 3005 71 OPH  
KLINGLER JR., EUGENE A., 1133 COLLEGE, 66502  
539-5341  
35 M 1902 62 GS  
LAFENE, BENJAMIN W., 1844 ANDERSON AVE., 66502  
—  
01 M 3806 31 OO  
LOWE, STANLEY W., 1133 COLLEGE AVE., 66502  
776-3451  
32 M 1902 59 OPH  
LYONS JR., FRANK C., 1133 COLLEGE AVE., 66502  
539-7641  
44 M 3840 70 OR  
MARSHALL, RONALD L., 1133 COLLEGE AVE., 66502  
539-5322  
42 M 3005 67 OBG  
MARTIN, DANIEL C., LAFENE HEALTH CENTER KSU, 66506  
532-6544  
30 M 1902 58 1M  
MCKNIGHT, DAVIO E., 1133 COLLEGE AVE., 66502  
539-7641  
32 M 1902 62 R  
MCNEIL, ELBERT O., 1133 COLLEGE, 66502  
537-9030  
22 M 702 48 PO  
MEEK, PALMER F., 1133 COLLEGE, 66502  
537-2651  
45 M 1902 71 1M

MILLER, ABRAHAM H., 1133 COLLEGE, 66502  
527-2651  
29 M 4101 54 1M  
MOSIER, MICHAEL L., 215 SOUTHWIND PL., 66502  
776-9761  
52 M 1902 77 FP  
MOSIER, STEVEN J., 215 SOUTHWIND PLACE, 66502  
776-9761  
49 M 1902 74 FP  
MOWRY, GERALD L., 1133 COLLEGE, 66502  
776-1400  
26 M 1902 53 OBG  
OLNEY, ROBERT O., 1133 COLLEGE AVE., 66502  
539-7555  
27 M 3005 51 GS  
PETERSON, JACK T., 1133 COLLEGE, 66502  
539-5363  
25 M 1902 50 PATH  
PHILIPP, JOSEPH THEODORE, 1115 WATERS, 66502  
537-7373  
45 M 1902 67 OPH  
PHILLIPS, STEPHEN B., LAFENE ST HEALTH CENTER, 66506  
532-6544  
17 M 1902 45 1M  
REITZ, LELAND C., 1133 COLLEGE, 66502  
537-2651  
36 M 1902 63 1M  
REITZ, ROGER P., 1133 COLLEGE, 66502  
537-2651  
32 M 1902 59 1M  
ROSE, GRAHAM C., 1133 COLLEGE, 66502  
537-9030  
46 M 4706 70 PO  
STONE, G. REX, 1133 COLLEGE AVE., 66502  
539-7555  
29 M 1902 54 GS  
TAYLOR, BARBARA O., 1133 COLLEGE, 66441  
239-7160  
50 F 1902 75 1M  
TIEMANN, WILLIAM H., 1133 COLLEGE, 66502  
532-6544  
42 M 3005 67 FP  
TOUT, ROBERT C., LAFENE STUDENT HLTH CTR, 66502  
532-6544  
27 M 4812 53 FP  
VOLKMANN II, HARLEY W., 1133 COLLEGE AVE., 66502  
539-7641  
47 M 1902 72 R  
WHITE, THEODORE H., 1735 ANDERSON AVE., 66502  
—  
15 M 1902 42 CO

**MANKATO—913**  
(*Republic County Society*)

KIMBALL, RICHARD R., 102 S CENTER, 66956  
378-3511  
45 M 1001 72 FP  
SCHLOTTERBACK, WILLIAM E., 517 N HIGH ST., 66956  
378-3511  
31 M 1902 61 FP

**MARION—316**  
(*Marion County Society*)

ENSEY, T. CRANFORD, 504 S ROOSEVELT, 66861  
382-2182  
20 M 4804 47 FP  
GUERRA, TOMAS H., 122 S CEDAR, 66861  
382-2137  
33 M 84704 65 1M

**MARYSVILLE—913**  
(*Northeast Kansas Society*)

ARGO, DONALD A., 808 N 19TH, 66508  
562-2303  
36 M 3005 64 FP  
LAWS, LEWIS R., 808 N 19TH, 66508  
562-2303  
25 M 1902 54 FP



**McLOUTH—913**  
(Jefferson County Society)

SNOOK, ROBERT RUFUS, .66054  
796-6116  
11 M 1902 42 FP

**McPHERSON—316**  
(McPherson County Society)

BILLINGS, THOMAS, 400 WEST 4TH, 67460  
241-5500  
39 M 1902 66 FP  
BRANDSTED, ERNEST C, 400 W 4TH, 67460  
241-1654  
18 M 1606 44 DRG  
COLLIER, WILLIAM J, 400 W 4TH, 67460  
241-1766  
25 M 3605 49 TS  
DYCK, ARTHUR H, 101 1/2 NORTH MAIN, 67460  
241-0357  
03 M 1902 28 FP  
FERREE, RICHARD ALLAN, 400 W FOURTH, 67460  
241-7400  
51 M 3006 76 FP  
JOHNSON, J RICHARD, 400 W 4TH, 67460  
241-4293  
28 M 1902 55 IM  
OUANO JR, BIBIANO B, MEMORIAL HCSP, 67460  
241-2250  
40 M 74801 63 U  
PIERSON, WEIR, 823 N MAIN, 67460  
241-1445  
17 M 1902 44 FP  
PRICE, VAUGHAN C, 120 N ASH, 67460  
241-1224  
05 M 4706 29 GS  
SOHLBERG JR, ROBERT, 604 S WALNUT, 67460  
—  
05 M 1606 34 DR  
THOMAS, GREGORY MCOUEEN, 400 W FOURTH, 67460  
241-7400  
47 M 1902 73 FP

**MEADE—316**  
(Iroquois County Society)

DAUGHERTY, ROBERT M, 631 E WALNUT, 67864  
—  
09 M 1902 36 FP  
DONAHOE, DORVAL H, PO BOX 488, 67864  
873-2181  
32 M 5501 63 FP  
HILL, RICHARD H, 234 EAST CARTHAGE, 67864  
873-2113  
18 M 1902 44 FP

**MEDICINE LODGE—316**  
(Tri-County Society)

HOFFER, JOHN G, 910 N WALNUT, 67104  
886-3222  
13 M 1902 44 GS  
STUCKY, DEAN E, 116 E KANSAS, 67104  
886-5653  
33 M 1902 60 FP

**MINNEAPOLIS—913**  
(Saline County Society)

BARKER, STEVEN E, 311 N MILL, 67467  
392-2144  
51 M 1902 76 FP  
WEDEL, KENNETH D, 311 N MILL ST, 67467  
392-2144  
32 M 1902 60 FP  
WEDEL, KERMIT G, 311 N MILL ST, 67467  
392-2144  
32 M 1902 60 FP

**MINNEOLA—316**  
(Iroquois County Society)

STEPHENS, CHARLES, MINNEOLA CLINIC, 67865  
885-4202  
33 M 2803 58 FP  
TROTTER, ROGER COURTNEY, MINNEOLA CLINIC, 67865  
885-4202  
47 M 1902 74 FP

**MONTEZUMA—316**  
(Ford County Society)

PHAM, TOAI KE, MONTEZUMA CLINIC, 67867  
846-2251  
34 M 94101 62 GP

**MORAN—316**  
(Allen County Society)

NEVITT, J RUSSELL, P C BCK 430, 66755  
—  
99 M 3510 32 DR

**MOUNDRIDGE—316**  
(McPherson County Society)

KAUFMAN, WILLARD E, 115 N CHRISTIAN AVE, 67107  
345-6322  
28 M 1902 53 FP  
LOGANBILL, VARDEN J, 115 N CHRISTIAN AVE, 67107  
345-6322  
26 M 1902 54 FP

**MULVANE—316**  
(Sedgwick County Society)

COBB, LESLIE H, 102 E MAIN, 67110  
777-1441  
17 M 4804 47 FP

**NASHVILLE—316**  
(Pratt-Kingman Society)

WAYLAN, THORNTON L, .67112  
—  
06 M 1902 35 DR

**NEODESHA—316**  
(Southeast Kansas Society)

CHRONISTER, BERT, PO BOX 118, 66757  
325-2622  
38 M 1902 64 FP  
MOORHEAD JR, F ALLEN, 709 MAIN ST, 66757  
325-2200  
39 M 1902 65 FP

**NESS CITY—913**  
(Central Kansas Society)

PRAKALAPAKORN, DARANEE, 412 N TOPEKA, 67560  
798-2233  
47 F 89101 69 PD  
PRAKALAPAKORN, YANYONG, 412 N TOPEKA, 67560  
798-2233  
43 M 89101 69 GS  
WIENS, PETER K, BOX B, 67560  
798-3191  
24 M 1902 55 FP

**NEWTON—316**  
(Harvey County Society)

ALLEN, FRANCES A, 1112 BOYD, 67114  
—  
15 F 1902 43 DR

BATES, MICHAEL NICHOLS, 301 MAIN, 67114  
283-7257  
50 M 1902 75 OBG  
BENTON, JAY S., 301 MAIN, 67114  
283-3600  
23 M 4804 49 OBG  
CAMPBELL, FRANCES S., 1901 E FIRST, 67114  
283-2400  
35 F 4101 61 P  
CARPER, IVAN H., AXTELL CLINIC, 67114  
283-2800  
28 M 1902 59 GS  
CARPER, OWEN E., AXTELL CLINIC, 67114  
283-2800  
37 M 1902 64 FP  
CLAASSEN, MILTON A., 201 S PINE ST., 67114  
283-3600  
32 M 1902 58 ORS  
CRAIG, CHARLES C., 203 E BROADWAY, 67114  
283-2800  
45 M 1902 71 ORS  
CRANSTON, STEPHEN D., AXTEL CLINIC, 67114  
283-2800  
45 M 1902 71 GS  
DYCK, GEORGE, PRAIRIE VIEW INC., 67114  
283-2400  
37 M 6201 64 P  
ENNS, EUGENE K., 6 INDIAN LANE, 67114  
-  
15 M 1902 40 OO  
ENNS, JAMES H., 914 N PINE, 67114  
-  
24 M 1902 47 OO  
FENT, LEE S., 316 OAK, 67114  
283-0505  
14 M 2834 43 GS  
FRANSEN, HERBERT, 209 S PINE, 67114  
283-5040  
32 M 6501 60 GS  
FRANSEN, PAUL H., 209 S PINE, 67114  
283-5040  
46 M 6501 71 FP  
GLOVER, RICHARD M., 203 E BROADWAY, 67114  
283-2800  
21 M 1902 53 FP  
GRISWOLD, DALE G., 203 E BROADWAY, 67114  
283-2800  
27 M 1902 53 IM  
GROVE, JOHN A., 407 W 16TH, 67114  
283-2800  
08 M 1606 37 ORS  
HENDRICKSON, JON R., 203 E BROADWAY, 67114  
283-2800  
51 M 1902 73 PD  
HENDRICKSON, KATHRYN C., 203 E BROADWAY, 67114  
283-2800  
52 F 1902 77 PD  
HWA, EUGENE C., 500 MAIN, 67114  
283-1160  
21 M 24216 47 R  
IRWIN, RICHARD L., 900 N POPLAR, 67114  
283-1400  
48 M 1902 75 OPH  
ISAAC, CHARLES A., AXTELL CLINIC, 67114  
283-2800  
25 M 1902 49 U  
KLASSEN, DANIEL S., 316 OAK, 67114  
283-1313  
13 M 1902 42 OBG  
KLIEWER, VERNON L., PRAIRIE VIEW MHC, 67114  
283-2400  
31 M 1606 57 CP  
KUMAR, SURINDER, 201 S PINE, 67114  
835-2241  
46 M 1902 69 OBG  
LINDHOLM, GERALD R., AXTELL CLINIC, 67114  
283-2800  
51 M 1902 76 FP  
MYERS, ROBERT W., RT 1, 67114  
-  
11 M 1902 43 OO  
NACHTIGALL, ANDREW, BETHEL CLINIC, 67114  
283-3600  
28 M 1902 59 PD  
O'TOOLE, JAMES K., PRAIRIE VIEW HOSPITAL, 67114  
283-2400  
28 M 1643 54 P  
OLSON, ERWIN T., BETHEL CLINIC, 67114  
283-3600  
19 M 1902 47 PD  
PREHEIM, DELBERT V., 209 S PINE, 67114  
283-5040  
13 M 702 42 IM

QAMAR, YUSUF, AXTELL CLINIC, 67114  
283-2800  
38 M 70409 62 IM  
RADOVANOV, RADMILA, 500 MAIN, 67114  
-  
34 F 95702 60 R  
RICH, ELTON S., BETHEL CLINIC, 67114  
283-6000  
16 M 1902 46 GYN  
SCHMIDT, HERBERT R., CEDAR VILLAGE, 67114  
-  
03 M 1902 34 OO  
SILLS, CHARLES T., 1631 HILLCREST, 67114  
-  
09 M 1902 37 OO  
SIMMONS, ROBERT EARLE, 209 S PINE, 67114  
283-5040  
49 M 1902 74 IM  
TANDOC JR., VALENTIN T., BETHEL CLINIC, 67114  
283-3600  
39 M 74809 62 U  
TOMPKINS, CARL O., 316 OAK STREET, 67114  
283-1380  
22 M 1902 51 FP  
VAUGHAN, DONNA A., 201 S PINE, 67114  
283-3600  
45 F 1902 71 IM  
VOGT, VERNON W., BETHEL CLINIC, 67114  
283-3600  
22 M 3005 53 FP  
VON GKASEMSIRI, SUNAN, 1709 CYPRESS LN., 67114  
283-1160  
41 M 89101 67 R  
WEBER, ROY R., 209 S PINE, 67114  
283-5040  
46 M 1902 73 IM  
WHEELER, DWIGHT E., BETHEL CLINIC, 67114  
283-3600  
50 M 2012 76 IM  
WIENS, J WENDELL, 201 S PINE, 67114  
283-3600  
32 M 1902 59 GS

### NORTON—913 (Northwest Kansas Society)

COLIP, F MERLYNN, 711 N NORTON, 67654  
927-3305  
35 M 1902 61 FP  
COOPER, ARTHUR E., 305 W WILBERFORCE, 67654  
-  
08 M 1611 34 GP  
HARTLEY, ROY WILEY, 711 N NORTON, 67654  
927-3305  
37 M 1902 63 FP  
HARTMAN, ROGER L., 711 N NORTON, 67654  
927-3305  
35 M 1902 61 FP  
LONG, ROBERT C., 711 N NORTON, 67654  
927-3305  
27 M 1902 53 GS

### NORTONVILLE—913 (Jefferson County Society)

MADISON, WILLARD A., 66060  
886-2110  
20 M 1902 51 FP

### OAKLEY—913 (Northwest Kansas Society)

OHMART, RICHARD V., PO BOX 756, 67748  
672-3262  
36 M 1902 62 FP  
SEKAVEC, GORDON B., 209 CENTER AVE., 67748  
672-3351  
07 M 1902 38 FP

### OBERLIN—913 (Northwest Kansas Society)

SIMPSON, ROBERT LIMBAUGH, 902 W COLUMBIA, 67749  
475-2221  
25 M 4706 51 GS



WHITAKER, REN R. 902 W COLUMBIA, 67749  
782-3953  
37 M 5404 66 FP

**OLATHE—913**  
(Johnson County Society)

ARONOFF, MICHAEL E. 407 S CLAIRBORNE STE 209, 66062  
782-3953  
39 M 1604 64 ENT  
BEEBE, EDMER, 420 EAST CEDAR, 66061  
—  
03 M 5605 32 FP  
BLISS, JOY V. 42 HOLLY DRIVE, 66062  
782-2292  
42 F 3005 68 ANES  
BLUM OC, MICHAEL A. 401 S CLAIRBORNE, 66062  
764-7060  
47 M 2878 73 PD  
BROWN, PAUL W. 405 S CLAIRBORNE, 66062  
782-3322  
44 M 1902 70 FP  
CHENOWETH, JOHN R. O.C., 304 S CLAIRBORNE, 66062  
782-6100  
36 M 2878 70 OST  
CLENDENIN, ROBERT KEELE, 1950 EAST SANTA FE, 66062  
764-6160  
48 M 1902 73 EM  
DELPHIA, ROBERT E. 401 S CLAIRBORNE, 66062  
782-1610  
24 M 1902 56 FP  
DUNN, MARTIN J. 407 S CLAIRBORNE STE 104, 66062  
764-1125  
49 M 2803 76 D  
EIDT, DAVID W. 407 S CLAIRBORNE, 66062  
782-8487  
44 M 2501 70 FP  
EIDT, LAURENCE A. 407 SOUTH CLAIRBORNE, 66062  
782-8487  
44 M 1902 71 FP  
FORTUNE, CEORIC B. 405 S CLAIRBORNE, 66062  
782-3322  
40 M 1902 66 FP  
GLAZZARD, CHARLES D. 407 S CLAIRBORNE, 66062  
782-3384  
28 M 2507 56 P  
HALVORSDN, HOWARD C. 407 S CLAIRBORNE, 66062  
782-2020  
41 M 5404 66 U  
HUDSON, ROBERT P. 12925 FRONTIER RD, 66061  
588-7040  
26 M 1902 52 IM  
JENSEN, THOMAS M. 407 S CLAIRBORNE, 66062  
782-1148  
47 M 3005 73 ORS  
LAIRD, OALE D. ONE PATRONS PLAZA, 66061  
782-3631  
42 M 1902 68 OPH  
MATHEWS, ROBERT C. 300 S ROGERS RD, 66062  
782-1451  
50 M 2834 77 EM  
MATTHEW, WILLIAM L. 405 S CLAIRBORNE, 66062  
782-3322  
29 M 1902 56 FP  
MCCANN, WILLIAM E. 540 E SANTA FE, 66061  
782-0262  
22 M 3901 48 FP  
MEE, ADRIAN W. 28 HOLLY DRIVE, 66062  
782-2292  
19 M 1902 54 ANES  
MENOLICK, R MICHAEL, 407 S CLAIRBORNE STE 101, 66062  
782-1148  
44 M 1902 70 ORS  
MILLIGAN, DONALD B. 401 S CLAIRBORNE, 66062  
782-1610  
48 M 2307 74 FP  
MORGAN II, DAVID LLOYD, 807 S CLAIRBORNE, 66062  
782-8300  
49 M 2820 77 IM  
PIERRON, GEORGE J. 540 EAST SANTA FE, 66061  
782-0260  
22 M 1902 47 FP  
PINCOMB, ARTHUR L. 401 S CLAIRBORNE, 66062  
782-1415  
20 M 1902 51 FP  
ROMONDO, STEVEN A. 300 SOUTH ROGERS RD, 66062  
782-2292  
47 M 1902 73 ANES  
RUHLEN, JAMES L. 807 S CLAIRBORNE, 66062  
782-8300  
46 M 1902 72 IM

SEAMAN, LAUREN I. 1010 S CLAIRBORNE, 66062  
782-1415  
07 M 6001 38 FP  
SETTLE JR, RUSSELL O. 407 S CLAIRBORNE, 66062  
782-3384  
35 M 1902 60 P  
SHANKER, STUART G. 401 S CLAIRBORNE, 66062  
764-7060  
49 M 2803 75 PD  
SHEFFER, KEITH O. 407 S CLAIRBORNE STE 101, 66062  
782-1148  
37 M 1720 67 ORS  
SNYDER JR, RICHARD HENRY, 300 S ROGERS ROAD, 66061  
782-1451  
45 M 1902 73 ANES  
STITES III, HAROLD W. 807 CLAIRBORNE, 66062  
782-8300  
50 M 2803 80 IM  
YEDMANS, RONALD N. 405 S CLAIRBORNE, 66062  
782-3073  
40 M 1902 67 OBG

**ONAGA—913**  
(Pottawatomie County Society)

FLECKENSTEIN, CHARLES S. 501 LUCIEN ST, 66521  
—  
07 M 1902 36 OO  
WALSH, THOMAS E. ONAGA CLINIC, 66521  
889-4241  
48 M 1902 74 FP

**OSAGE CITY—913**  
(Flint Hills Society)

WILLIAMS, HOMER J. 611 S SIXTH, 66523  
—  
05 M 1902 31 FP

**OSAWATOMIE—913**  
(Miami County Society)

APPENFELLER, WILLIAM C. 524 BROWN AVE, 66064  
755-3166  
25 M 1902 53 FP  
KEIL, JAMES E. BOX 500, 66064  
755-3151  
44 M 1902 70 P  
MORALES, AMALIA D. P O BOX 500, 66064  
755-3151  
22 F 21501 50 ADM  
MORALES, OTTO E. P O BOX 500, 66064  
755-3151  
22 M 27501 51 P

**OSWEGO—316**  
(Labette County Society)

BURGESS, ARTHUR P. 504 5TH STREET, 67356  
795-4427  
19 M 1902 52 FP  
SHORTES, LOIS E. 220 UNION, 67366  
795-4868  
FP

**OTTAWA—913**  
(Franklin County Society)

BLANKENSHIP, JIM O. 1320 S ASH, 66067  
342-5581  
50 M 2834 76 FP  
CORDER, S SCOTT, 1502 S CEDAR, 66067  
242-2641  
51 M 1902 76 FP  
GOLLIER, ROBERT A. \*, 66067  
—  
13 M 1902 37 OO  
GOLLIER II, ROBERT A. 1320 S ASH, 66067  
242-1620  
40 M 1902 66 FP  
HADLEY, DELMONT C. 1320 SOUTH ASH, 66067  
242-3891  
35 M 1902 64 FP

HENNING, CALVIN W., 1502 CEDAR, 66067  
 242-2641  
 05 M 1902 35 FP  
 LAURY, DAVIO G., 1320 S ASH, 66067  
 242-1620  
 17 M 1606 44 FP  
 LOFGREEN, VICTOR J., 39 ROCKWOOD DRIVE, 66067  
 -  
 97 M 1902 32 00  
 PHILGREEN, DONALD E., 1320 S ASH, 66067  
 242-3891  
 39 M 1602 67 FP  
 RANSOM, WILLARD B., 1320 S ASH, 66067  
 242-1620  
 49 M 1902 77 FP  
 REYES JR, FRANCISCO A., 1320 S ASH, 66067  
 242-5312  
 38 M 74801 61 GS  
 SAYLOR, STEPHEN, 1320 ASH, 66067  
 242-1620  
 47 M 1902 73 FP  
 SPEER, LOUIS N., PO BOX D, 66067  
 242-1257  
 14 M 1606 41 FP  
 STREHLOW, CHESTER H., PROFESSIONAL PLAZA BLDG, 66067  
 242-3891  
 30 M 1902 57 FP

**OVERBROOK—913**  
*(Shawnee County Society)*

RUBLE JR, JAMES L., OVERBROOK COMM CLINIC, 66524  
 665-2205  
 26 M 1902 53 FP

**PAOLA—913**  
*(Miami County Society)*

BANKS, ROBERT E., PO BOX 298, 66071  
 294-2305  
 29 M 1902 55 FP  
 NAIK, GOPAL V., 700 BAPTISTE DR, 66071  
 294-5316  
 46 M 49501 71 OBG  
 ROWLETT, JACK G., PO DRAWER A, 66071  
 294-2356  
 21 M 1902 52 FP  
 STANLEY, REX C., PC DRAWER A, 66071  
 294-2356  
 24 M 1902 52 GS

**PARSONS—316**  
*(Labette County Society)*

AVES, AGNES, 1509 MAIN, 67357  
 421-0600  
 38 F 74801 59 1M  
 AVES, RENATO B., 1509 MAIN STREET, 67357  
 421-0600  
 35 M 74801 59 GS  
 BOLT, MICHAEL, 400 KATY, 67357  
 421-2700  
 51 M 1902 76 GS  
 BDRKLUND, MAURICE K., 400 KATY, 67357  
 421-2700  
 21 M 1720 50 GS  
 CAREY, LARRY J., LABETTE CO MED CL SUITE 5, 67357  
 421-8361  
 51 M 1902 74 FP  
 CRAMER, GUY W., 412 MURDOCK, 67357  
 -  
 11 M 1902 39 00  
 DAIZ, ANTONIO S., LABETTE COUNTY MED CTR, 67357  
 421-4880  
 37 M 74810 63 OR  
 OILLDN, WILLIAM L., LABETTE CO MED CL BOX H, 67357  
 421-0881  
 45 M 1902 71 DRS  
 HENDERSON, CHARLES F., 1617 GRAND, 67357  
 -  
 14 M 1902 40 00  
 HOMPLUEN, PACHAREE, 310 N SIXTEENTH, 67357  
 421-2460  
 43 F 89102 69 PO  
 KISHORE, ROY N., 3604 GABRIEL APT 221, 67357  
 421-4251  
 44 M 49511 66 OTO  
 KISHORE, SHEELA, 3604 GAERIEL APT 221, 67357  
 421-2741  
 43 F 49511 66 ANES

LAVA, CHIRUND., 107 MAIN PO BOX 290, 67357  
 421-6210  
 40 M 89102 63 GS  
 MARTIN, EARL A., 1516 GRAND, 67357  
 -  
 07 M 1606 35 00  
 MILLER, CHARLES H., 2819 CLARK, 67357  
 -  
 07 M 3006 32 00  
 MILLER, DEAN M., 203 CRESTVIEW, 67357  
 421-4880  
 22 M 1902 48 R  
 MILLER, STEPHEN FRANCIS, 1509 MAIN, 67357  
 421-0600  
 45 M 1902 70 GS  
 PACE, JOHN D., KATY HCSPITAL CLINIC, 67357  
 421-1010  
 94 M 1902 20 FP  
 PAI, RADHA V., 1710 CORNING, 67357  
 421-0080  
 45 6701 ANES  
 PAI, VARADARAJ S., 1710 CORNING, 67357  
 421-0080  
 42 6701 U  
 PARANJOTHI, SUBRAMCNIAM P., 1509 MAIN, 67357  
 421-6160  
 39 M 49531 64 1M  
 PAULS, DANIEL N., 2600 CORNING, 67357  
 421-1431  
 45 M 1902 71 1M  
 ROJAN, CHAVALLIT, 310 N 16TH, 67357  
 421-2460  
 47 M 89102 72 PO  
 ROTHSTEIN, TERRY B., 220 NORTH 32ND, 67357  
 421-5900  
 43 M 1606 69 OPH  
 SHARMA, ARUN L., 1509 MAIN, 67357  
 421-0600  
 46 F 49503 69 FP  
 SWARTZ, WARREN E., 400 KATY AVE, 67357  
 421-2700  
 25 M 1902 52 GS  
 TANGCHUPONG, CHANTRASIRI, 310 N 16TH, 67357  
 421-2460  
 47 F 89102 71 PO  
 TANGCHUPONG, SAROHO, 310 N 16TH, 67357  
 421-2460  
 43 M 89102 69 OBG  
 VERMA, ASHA, 400 KATY, 67357  
 421-9090  
 37 F 49530 63 PO  
 WHITE, JOHN P., PARSONS CLINIC, 67357  
 421-0600  
 17 M 1902 42 FP

**PITTSBURG—316**  
*(Crawford County Society)*

ARMSTRONG, HAROLD J., PROFESSIONAL BUILDING, 66762  
 232-2600  
 40 M 1902 68 ORS  
 BENA, JAMES H., 109 EAST 9TH, 66762  
 231-6950  
 12 M 3005 36 PD  
 BERKEY, VERNON A., KIRKWOOD BLDG, 66762  
 231-7650  
 18 M 1902 43 R  
 BIERLEIN, KENNETH J., 812 S CATALPA, 66762  
 -  
 06 M 1606 33 DO  
 COOMER, TYLER E., 315 NATL BANK BLDG, 66762  
 231-7730  
 30 M 2101 59 GS  
 CDOPER, KENT J., 909 CENTENNIAL, 66762  
 231-6280  
 41 M 1902 73 FP  
 ERICKSON, CLARENCE W., 217 NATL BANK BUILDING, 66762  
 231-7400  
 06 M 1902 33 1M  
 ESCH, JOHN G., 207 KIRKWOOD BLDG, 66762  
 231-5360  
 24 M 3006 48 GS  
 FREEMAN, MALCOLM C., MT CARMEL MEDICAL CENTER, 66762  
 231-6100  
 44 M 35207 68 ANES  
 GOMETZ, MODESTO S., 909 E CENTENNIAL #6, 66762  
 231-2490  
 35 M 72601 63 PD  
 HOLSINGER, DONALD M., 1015 MT CARMEL PL, 66762  
 231-5900  
 38 M 1902 64 1M



HUEBNER, ROBERT STEPHAN, NATIONAL BANK BLDG.66762

231-6160

42 M 1606 67 GS

HUERTER, DAVID F., 909 CENTENNIAL.66762

231-1650

46 M 1902 72 IM

LANCE, RAYMOND W., 608 W QUINCY.66762

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22 M 1902 47 OO

LEFFLER, PAUL B., 309 WINWOOD.66762

-

02 M 1902 40 OO

MILLER, EARL E., 1312 S BROADWAY.66762

231-6410

13 M 1902 37 ENT

MULLER, SAMUEL B., 611 W QUINCY.66762

-

05 M 1902 34 OO

NEWMAN, CLIFFORD R., 1204 E 7TH.66762

-

01 M 1902 28 OO

ODGERS, ROONEY K., 909 CENTENNIAL.66762

231-4300

M 1902 74 IM

PAPP, DEAN, R 5 BOX 293.66762

231-7650

46 M 1902 72 OR

POGSDON, GEORGE W., 1015 MT CARMEL PLACE.66762

231-5900

24 M 1902 47 IM

RAMIREZ, AUGUSTO H., 909 CENTENNIAL.66762

231-1600

32 M 26407 58 IM

RAMIREZ, IRENE, 909 CENTENNIAL.66762

231-6280

F PQ

SCHLEMMER, ROGER R., 1009 S BROADWAY.66762

231-6380

37 M 1902 68 OPH

SEGLIE, FLOYD RONALD, 909 CENTENNIAL OR SUITE 3.66762

231-6280

43 M 1902 69 FP

TWEET, FREDERICK A., MT CARMEL HOSPITAL.66762

231-6100

39 M 1602 66 PATH

WOOD, DOUGLAS H., 413 W JEFFERSON.66762

-

11 M 5605 36 OO

YAGHMUR, TALAAT E., 905 NCRTH LOCUST.66762

231-0850

40 M 33002 64 U

ZABEL, KENNETH P., 909 CENTENNIAL.66762

231-1650

37 M 1902 65 IM

**PLAINVILLE—913**  
(Central Kansas Society)

PAGE, D VALE, 409 S CCHHRAN ST.67663

434-4609

20 M 1902 51 FP

PEDERSON, ARNOLD M., 409 S CCHHRAN.67663

434-4609

22 M 1902 51 FP

**PLEASANTON—913**  
(Bourbon County Society)

JUSTUS, WILLIAM J., .66075

352-6134

29 M 1902 55 FP

**PRATT—316**  
(Pratt-Kingman Society)

AMBLER, CARL D., 200 CCMCDORE.67124

672-6476

31 M 1902 57 R

BARKER, PATRICK N., 420 CCOUNTRY CLUB RD.67124

672-7411

45 M 1902 71 GS

BLACK, CYRIL V., 223 E 4TH.67124

672-6403

05 M 4802 30 GS

CHAFFIN JR, GOODLCE S., 420 COUNTRY CLUB RD.67124

672-7411

50 M 4705 75 FP

FILLEY, VERDON W., 310 E 2ND.67124

672-5555

13 M 3005 43 GS

FREEMAN, F GILES, 310 E 2ND.67124

672-5555

18 M 1902 44 FP

JACKS, J WARREN, 602 E 2ND.67124

672-5559

23 M 1902 48 FP

PITMAN, WILL O., 717 WEST 3RD.67124

-

98 M 1902 25 OO

QUENZER, RONALD W., 420 CCOUNTRY CLUB RD.67124

672-7411

46 M 1601 73 IM

SIBALA, JUSTO L., 200 CMMDDORE.67124

672-7159

20 M 74802 49 R

SUITER, DANIEL JAY, 420 COUNTRY CLUB.67124

672-7411

44 M 1902 71 GE

THOMAS, R CULLEN, 420 COUNTRY CLUB RD.67124

672-7411

47 M 1902 72 GS

THORPE, FRANCIS A., 310 E 2ND.67124

672-5555

08 M 1606 35 FP

WOLFF, FREDERICK P., 223 E 4TH.67124

672-6403

20 M 1902 44 IM

**PROTECTION—316**  
(Iroquois County Society)

GLENN, LYLE G., 146 BRDQWAY BCX 447.67127

622-4686

12 M 1606 40 FP

**QUINTER—913**  
(Northwest Kansas Society)

GUNTER, CARL C., QUINTER CLINIC BLDG.67752

754-3333

20 M 1902 51 FP

HIESTERMAN, HERMAN W., QUINTER CLINIC BLDG.67752

754-3333

23 M 1902 51 FP

**RANSOM—913**  
(Central Kansas Society)

MCLAIN, KENNETH, BCX 247.67572

731-2295

21 M 1902 46 FP

**RILEY—913**  
(Riley County Society)

BASCOM, CHARLES H., RR 1 BOX 322.66531

239-7777

31 M 1902 55 FP

OLTMAN, THEODORE V., RR 1 BOX 145B.66531

-

00 M 1601 29 OO

**RUSSELL—913**  
(Central Kansas Society)

ELQREDGE, LOUIS O., 222 S KANSAS.67665

483-6000

48 M 74809 79 GP

MERKEL, EARL O., SHIELOS BLDG.67665

483-2178

32 M 1902 57 FP

PANICHAHONGSE, SAMBUNGH, 213 WEST 7TH.67665

483-2178

43 M 89101 67 GS

PETTIJOHN, WALTER J., 624 W 12TH.67665

-

12 M 1902 37 OO

STARKEY, JERALD L., 326 MAIN.67665

483-2178

30 M 1902 56 FP

SWANN, CLAIR L. 112 W 7TH,67665  
 483-4212  
 13 M 1902 39 1M  
 WHITE, FAGAN N. 356 W 5TH,67665  
 -  
 11 M 702 36 00

**SABETHA—913**  
*(Northeast Kansas Society)*

MONTGOMERY, THOMAS ALLEN. 1018 MAIN ST,66534  
 -  
 10 M 1902 49 00  
 YULICH, JOHN O, 66534  
 284-2125  
 33 M 1902 59 FP

**SALINA—913**  
*(Saline County Society)*

ALLEN, MONTE L. 600 S SANTA FE,67401  
 827-0307  
 36 M 1902 61 0TO  
 ANDERSON, JOOY. 737 E CRAWFORD,67401  
 827-7261  
 32 F 1902 59 1M  
 BAXTER, W REESE, P O BOX 1707,67401  
 825-8221  
 47 M 1902 73 FP  
 BROWN, ROBERT WAYNE, PO BOX 1747,67401  
 827-5591  
 23 M 1902 55 1M  
 BRUMMETT, RICHARD R. P O BOX 1707,67401  
 825-8221  
 34 M 1902 64 FP  
 BRUNGART, BERNARD A. 400 E 8ELOIT,67401  
 827-4433  
 21 M 3006 46 ANES  
 CATHCART-RAKE, WILLIAM F. 80X 360,67401  
 827-7261  
 48 M 1902 74 1M  
 CLARK, OAVIO H. 617 E ELM,67401  
 825-8221  
 36 M 1902 62 FP  
 COFFEY, ROY B. 671 ELMORE DRIVE,67401  
 823-6397  
 24 M 1902 47 ORS  
 CONNELLY, MAURICE R. RR 3 BOX 44,67401  
 -  
 12 M 2002 38 G5  
 CONNER, BRIAN. 1518 8 EAST IRON,67401  
 825-2272  
 46 M 1902 OPH  
 COVERT, THOMAS J. PO BOX 360,67401  
 827-7261  
 45 M 1902 71 PO  
 CULTRON, FRANK T. 800 E CRAWFORD,67401  
 823-8151  
 10 M 1643 38 OPH  
 O'SOUZA, BISMARCK C. 116-A S 7TH,67401  
 827-9526  
 45 M 49501 67 R  
 OICKERSON 11. W JOHN. 135 E CLAFLIN,67401  
 827-9631  
 51 M 3005 76 1M  
 ODWELL, JAMES C. 645 E IRON,67401  
 827-7255  
 26 M 1611 49 1M  
 ORAEMEL, H RICHARD. 600 S SANTA FE ST,67401  
 827-0307  
 18 M 1902 53 0TO  
 OREHER, HENRY S. 737 E CRAWFORD,67401  
 827-7261  
 18 M 1902 43 1M  
 EATON, GLEN E. RFO 6,67401  
 827-3064  
 28 M 1902 54 ANES  
 EATON, LESLIE F. RR 1 BOX 75,67401  
 -  
 06 M 1902 32 00  
 ELLISON, PAUL O. 1499 E IRON,67401  
 825-7271  
 35 M 2105 60 OPH  
 FORSTER JR, LOUIS G. 2033 RAYMONO,67401  
 825-8221  
 47 M 1902 73 FP  
 FREEMAN, RAYMONO S. 737 E CRAWFORD,67401  
 827-7261  
 20 M 702 50 PO  
 GANS, FREDERICK A. 737 E CRAWFORD,67401  
 227-7261  
 22 M 2834 46 PO

GRIFFITH, FRANK H. 1493 E IRON,67401  
 827-0428  
 45 M 4813 75 OPH  
 GUNN, MARVIN R. 116A S 7TH PO BOX 1059,67401  
 827-9526  
 28 M 3901 54 R  
 GUZMAN, MANUEL. CKMHC,67401  
 823-6322  
 27 M 64901 54 P  
 HARBIN, GARY LYNN. 519 S SANTA FE,67401  
 827-4424  
 50 M 1902 75 ORS  
 HARRIS, NORMAN R. 430 S 7TH,67401  
 825-8191  
 30 M 1902 59 08G  
 HASSLER, RANDY O. 645 E IRON,67401  
 827-9635  
 45 M 1902 U  
 HATTON, LLOYD W. 709 HIGHLAND,67401  
 827-6256  
 06 M 1902 33 P  
 HESSE, FREDERICK J. PC BOX #918,67401  
 827-9631  
 50 M 1902 75 1M  
 HODGES, MERLE A. 430 S 7TH ST,67401  
 825-8191  
 34 M 1902 58 08G  
 HOLMAN, JON B. PO BOX 61,67401  
 827-9366  
 33 M 1902 63 P  
 JACKSON JR, OELMAS A. 645 E IRON,67401  
 827-7255  
 35 M 2101 60 1M  
 KREHBIEL, MARK A. 617 E ELM,67401  
 825-8221  
 49 M 1902 74 FP  
 KRUCKENMYER, ALAN L. 645 E IRON,67401  
 823-2215  
 45 M 1103 71 OR5  
 LAKE, MAX S. 600 S SANTA FE,67401  
 827-0307  
 19 M 3005 43 OPH  
 LASLEY, OAVIO A. 645 E IRON,67401  
 827-9635  
 22 M 1606 47 U  
 LIVINGSTON, CHARLES E. 400 E IRON,67401  
 827-9631  
 32 M 1611 57 GS  
 LUNGSTRUM, JACK E. PO BOX 1346,67401  
 823-2215  
 21 M 1902 59 OR5  
 MACY, NORMAN E. RR 3 BOX 37A,67401  
 827-4053  
 35 M 1902 60 PATH  
 MACY, TEO L. PO BOX 360,67401  
 827-7261  
 43 M 1902 71 G5  
 MARCHBANKS, DONALD L. 520 COUNTRY CLUB RD,67401  
 823-2380  
 24 M 1902 51 FP  
 MARSHALL, GEORGE W. PC BOX 1705,67401  
 225-3191  
 44 M 1902 70 08G  
 MARTIN, OLIVER L. 715 E REPUBLIC,67401  
 827-9631  
 08 M 1902 37 08G  
 MATHIS, JERRY L. 1112 ALBERT,67401  
 827-9343  
 35 M 1902 62 POA  
 MAXWELL, GOROCN E. PO BOX 918,67401  
 827-9631  
 29 M 1902 55 08G  
 MCCRAE, SPENCER C. 519 S SANTA FE,67401  
 827-4424  
 18 M 3509 43 OR5  
 MILLER, ELOEN V. 1928 RIDGELEA,67401  
 827-3061  
 19 M 1902 44 ANES  
 MITCHELL, JOHN C. 617 UNITED BLOG,67401  
 827-3061  
 13 M 1902 38 G5  
 MOWERY, WILLIAM E. 737 E CRAWFORD,67401  
 823-6455  
 23 M 1902 47 G5  
 NICKELL, WAITSTILL B. 400 E IRON,67401  
 827-9618  
 24 F 1606 50 ANES  
 NICKELL, WENDELL K. 400 E IRON,67401  
 827-9618  
 26 M 1606 50 TS  
 OBAND, GUILLERMO. 2110 KNOLLCREST OR,67401  
 823-6219  
 35 M 26404 62 R



PALMER, GERALD K, 1952 R10GLEA RD, 67401

24 M 1803 53 PATH  
 RASSA, REZA P, 204 SEITZ DRIVE, 67401  
 827-4411

33 M 51701 59 R  
 REECE, RICHARD J, 116A S 7TH, 67401  
 827-9526

23 M 1902 49 R  
 RODERICK, JAMES E, 645 E IRON, 67401  
 827-9635

23 M 1902 47 U  
 ROMEISER, REX S, 645 E IRON, 67401  
 827-9635

41 M 1902 67 U  
 RUEB, ANDREW E, 11 CRESTVIEW DR, 67401  
 827-6691

11 M 1606 35 G5  
 SCHMIOT, RAMON WARNER, 400 E IRON, 67401  
 827-9618

39 M 1902 65 G5  
 SCOTT, CHESTER E, 519 S SANTA FE, 67401  
 827-5549

23 M 1902 51 FP  
 SEBREE, STEVEN G, PO BOX 360, 67401  
 827-7261

47 M 1902 73 O8G  
 SIMPSON, J COLBERT, 308 WEST SOUTH, 67401

07 M 3006 38 00  
 SLOO, MILO G, PO BOX 1346, 67401  
 823-2215

41 M 1902 67 OR5  
 SMITH, BOYO E, BOX 1285, 67401  
 827-4053

46 M 3005 72 PATH  
 SMITH, HAROLD R, PO BOX 360, 67401  
 827-7261

19 M 1902 51 GS  
 SNYDER, THOMAS E, 715 VICTORIA HEIGHTS TERR, 67401

47 M 1902 69 O8G  
 STOSKOPF, LAWRENCE E, 2413 EDGEHILL, 67401  
 685-4389

39 M 1902 72 ANE5  
 TAYLOR, THOMAS F, 430 S OHIO, 67401  
 827-0346

26 M 1902 53 FP  
 WAGENBLAST, HOWARD R, 737 E CRAWFORD, 67401  
 827-7261

21 M 1902 49 FP  
 WATERS, CLARENCE N, 530 S 5TH, 67401  
 823-6497

13 M 2834 48 O  
 WEBER, ROBERT W, 645 E IRON, 67401  
 827-7255

26 M 1902 49 IM  
 WEBER II, RALPH H, PO BOX 360, 67401  
 827-7261

44 M 3005 75 PO  
 WOERNER, DAVID R, 539 S SANTA FE, 67401  
 825-9397

49 M 64914 75 FP

### SATANTA—316 (Southwest Kansas Society)

JABEL, JUVENAL T, SATANTA CLINIC, 67870  
 649-2771

43 74809 IM

### SCOTT CITY—316 (Southwest Kansas Society)

DUNN, DANIEL R, 1210 RUSSELL, 67871  
 462-3332

49 M 1902 26 FP  
 FIELDS, GALEN W, 1106 COLLEGE, 67871

15 M 1902 49 00  
 HOPKINS JR, 8 MORRISON, 804 CRESCENT, 67871  
 872-2187

23 M 1902 53 FP

### SEDAN—316 (Southeast Kansas Society)

LIM, CARLO, 104 W MAIN, 67361  
 725-3171

44 M 74801 70 IM

TAYLOR, ELMER W, 120 WEST OSAGE, 67361  
 725-3141

28 M 512 57 FP  
 WALKER, WILLIAM K, 111 E CHEROKEE, 67361  
 725-3171

18 M 1902 45 FP

### SENECA—913 (Northeast Kansas Society)

BERKLEY, NORMAN W, 15 SOUTH 5TH ST, 66538  
 336-2128

31 M 1902 63 FP  
 GILBERT, J HOWARD, 603 N FIFTH, 66538

05 M 1902 41 00  
 LUEGER, JAMES JOHN, 201 N 51XTH, 66538  
 336-6113

51 M 2878 78 GP  
 MC GEENEY, TERRY L, 201 N 51XTH, 66538  
 336-6113

51 M 1902 77 FP

### SHARON SPRINGS—913 (Northwest Kansas Society)

CHUNG, JOHN J, WALLACE CO MED CLINIC, 67758  
 852-4214

23 M 58301 48 FP

### SHAWNEE MISSION—913 (Johnson County Society)

ALLEN JR, WILLIAM R, 6734 GRANADA RD, 66208

46 M 1902  
 ALTENBERND, ELVIN CONRAD, 7319 W 81ST, 66204  
 648-2010

26 M 1902 54 FP  
 ALVAREZ, LUIS A, 8100 MARTY, 66204  
 649-3400

32 M 64914 61 FP  
 ARMBRUSTER, ALBERT A, 9119 WEST 74TH SUITE 202, 66204  
 362-9220

17 M 512 55 GS  
 ATHON, MERRILL O, 8501 DELMAR LANE, 66207  
 642-4242

24 M 1902 54 FP  
 BAQEN II, LOUIS JOHN, 10550 QUIVIRA RD, 66215  
 492-3344

49 M 2820 74 OPH  
 BAEKE, JOHN O, 6806 WEST 83RD, 66204  
 642-4242

19 M 1902 52 FP  
 BAKER, WILLIAM STEVEN, 7700 W 63RD, 66202  
 262-1843

47 M 702 73 P  
 BALANOFF, ARNOLD Z, 4601 W 109TH SUITE 122, 66211  
 642-4040

42 M 1803 67 PO  
 BANSAL, SATISH C, 8901 W 74TH SUITE 147, 66204  
 384-2220

38 M 49541 61 ORS  
 BAPTIST, JEREMY E, 5811 OUTLOOK, 66202  
 432-0625

40 M 2846 78 A  
 BARE II, CHARLES E, 8901 W 74TH SUITE 353, 66204  
 764-3081

43 M 1902 69 U  
 BARKER, ELIZABETH B, 4121 WEST 83RD SUITE 123, 66208  
 381-6669

30 F 4706 55 P  
 BARKER, JAMES BERTON, 8901 W 74TH, 66204  
 362-6310

31 M 4706 55 OTO  
 BARNETT JR, THOMAS E, 10550 QUIVIRA SUITE 290, 66212  
 492-2555

52 M 1902 75 IM  
 BARNHART, RONALD J, 9119 WEST 74TH, 66204  
 831-2334

41 M 2501 68 O8G  
 BARR, RICHARD N, 7301 MISSION ROAD, 66208  
 432-4366

32 M 1902 57 OPH

BARRICK, BRUCE, SH MISSION MEDICAL CENTER,66201

676-2340  
39 M 1902 65 PATH

BATTY, LARRY H, 9119 W 74TH,66204

831-2334  
51 M 1902 77 08G

BATTY, THOMAS V, 5555 W 58TH,66202

432-2080  
21 M 3806 54 FP

BEAMON, RICHARD F, 10500 OUIVIRA,66215

492-1000  
47 M 2803 73 EM

BELL, DELDRIS W, 4601 WEST 109TH SUITE 104,66211

341-6550  
42 F 1902 68 OPH

BELZER, EDWARD G, 4601 WEST 109TH SUITE 110,66211

381-8282  
36 M 3005 58 PO

BERRY, JOHN M, 8800 W 75TH SUITE 320,66204

262-3288  
47 M 1902 74 O

BIKALES, VICTOR WILLIAM, 7301 MISSION RD,66208

384-1311  
13 M 2105 38 P

BISHOP, FRANCIS E, 7501 MISSION ROAD,66208

648-3533  
20 M 1902 45 P

BLETZ, DONALD B, 10550 OUIVIRA RD/5TH FL,66215

492-6200  
28 M 5104 58 1M

BOLLES, J MICHAEL, 5949 NIEMAN ROAD,66203

631-1300  
35 M 1902 61 FP

BOSWELL, H CRAIG, 10550 OUIVIRA STE 510,66215

492-6200  
47 M 1803 73 ANES

BRAVERMAN, DAVID ELLIOTT, 4601 W 109,66211

341-1101  
47 M 2507 72 POO

BRIIGENS, JAMES G, SH MISSION MEDICAL CENTER,66201

676-2340  
22 M 1902 47 PATH

BROUCEK, FRANCIS J, 4121 W 83RD,66208

642-6845  
32 M 1643 58 P

BROWN, WILLIAM R, 7301 MISSION RD,66208

236-8866  
23 M 1902 48 IM

BROXTERMAN, STEVEN JOSEPH, 8901 W 74TH,66204

362-5510  
51 M 1902 76 FP

BRUNING, ROGER MARION, 7301 MISSION SUITE 342,66208

384-0745  
48 M 1902 70 FP

BUCKMAN, MARTIN SPALDING, 10550 OUIVIRA SUITE 290,66215

492-6200  
49 M 2802 76 IM

BURGER, PAUL B, 5638 NIEMAN ROAD,66203

631-6114  
25 M 2834 50 FP

BURKET JR, GEDRGE E, 2012 CONDOLEA DR,66209

-  
12 M 1902 37 00

BURTON, JERALD ALBERT, 10550 OUIVIRA,66215

492-6200  
42 M 2846 73 IM

CAIN, IVAN W, 4200 SCHMERSET STE 224,66208

649-4599  
18 M 1902 44 ORS

CALKINS, JOHN W, 5213 ROSEWOOD DR,66205

-  
51 M 1902 76 08G

CALKINS, LARRY L, JOHNSON CO NATL BK BLOC,66207

649-0110  
18 M 1902 43 OPH

CARDOFF, JAY J, 6300 GLENWOOD,66202

432-4480  
25 M 3006 54 FP

CARRASCO, LENCOR C, 8971 W 75TH,66204

341-2000  
41 F 74801 63 PO

CASTEEL, CHARLES K, 8901 W 74TH SUITE 357,66204

342-1003  
34 M 3901 59 U

CAUGHRON, MICHAEL ROBERT, 5105 NEOSHO,66205

-  
49 M 1902 74 PATH

CAVITT, ROBERT F, 9119 WEST 74TH,66204

831-0700  
24 M 1902 48 GS

CEDERLIND, CRANSTON JAY, 8901 W 74TH SUITE 328,66204

236-6455  
45 M 1902 71 08G

CHANG, SHU FANG, 10200 W 75TH,66204

432-7885  
25 F 24239 49 P

CHRISTIAN, STANLEY J, 9129 DELMAR,66207

-  
18 M 1902 44 00

COE, RICHARD O, 7301 MISSION RD SUITE 247,66208

362-8505  
31 M 4804 56 OPH

COHEN, ROBERT A, 3700 W 83RD,66208

642-2100  
39 M 2803 64 PO

COHN, STEVEN G, 8627 LINDEN DR,66207

334-2500  
41 M 1902 67 ANES

COOLEY, DAVID A, 8800 W 75TH,66204

362-1226  
40 M 1902 62 RHU

COOPER, JACK R, 7301 MISSION RD SUITE 330,66208

432-6300  
17 M 3840 43 NS

COOPER, LEO F, 3818 W 57TH TERR,66205

588-6766  
15 M 1902 53 FP

CORBIN, MURRAY D, 10550 OUIVIRA RD-5TH FL,66215

492-6200  
39 M 1902 65 IM

COULTER, HENRY F, 4203 W 151 ST,66224

-  
23 M 1902 51 00

CDULTER, THOMAS B, 8800 W 75TH SUITE 310,66204

677-3113  
38 M 1205 64 DPH

COX JR, IRA, 5829 WOODSON PO BOX 975,66201

722-1100  
19 M 1902 49 FP

CURRAN, KEVIN E, 4121 W 83RD,66208

649-9383  
39 M 2803 65 OPH

DAVIS, RICHARD E, 8500 W 110TH SUITE 308,66210

648-5303  
26 M 1902 54 P

DELP, MAHLON H, 6131 TERRYDALE RD,66202

-  
03 M 1902 34 IM

DENISON, TERRY R, 5811 OUTLOOK,66202

432-0625  
29 M 1902 56 PO

DERRINGTON, KENNETH L, FOX HILL MED BLOC,66211

341-3535  
44 M 1902 71 FP

DOCKHORN, ROBERT J, 5300 W 94TH TERR,66207

381-4674  
34 M 1902 60 PDA

DOHERTY, WILLIAM R, 7600 STATE LINE,66208

649-3900  
20 M 3006 56 FP

DOCKETT II, THOMAS G, 4601 W 109TH SUITE 116,66211

648-1022  
41 M 1902 67 OPH

EIKERMANN, WILLIAM C, 9400 MISSION RD,66206

642-5184  
42 M 1902 69 P

ENDERS, WRAY, 9034 COTTONWOOD DR,66215

-  
02 M 1902 36 ANES

ESRIG, HAROLD L, D.O., 8132 SAGAMORE,66206

381-5033  
30 M 2878 60 ANES

ETZENHOUSER III, RUSSELL D, P D BOX 7426,66207

381-8282  
34 M 1902 59 PO

EVANS JR, WILLIAM E, 8741 HIGH DRIVE,66206

362-7363  
24 M 1902 58 FP

FERGUSON, ROBERT LEON, 8901 W 74TH SUITE 208,66204

362-6161  
47 M 1902 73 IM

FORDYCE, NORMAN, 8901 W 74TH,66204

722-0020  
41 M 1902 67 OTD

FRANCISCO, CLARENCE L, 3509 W 85TH,66206

371-6802  
09 M 1902 34 ORS

FULLEN, JERYL G, 8901 W 79TH,66204

831-2604  
43 M 401 68 ORS

GALLEHUGH, KEITH W, 9027 BIRCH,66207

371-4343  
32 M 1902 57 R

GARCIA, FRANCISCO, 8020 SANTA FE,66204

642-5000  
32 M 27501 60 FP



GARDNER, GLENN M. 5200 WEST 64TH,66208

35 M 2803 60 IM  
GENTRY, KALE C. 5105 W 84TH,66207  
632-4242

31 M 1902 60 FP  
GILBERT, ROBERTA M. GEORGETOWN MEDICAL BLDG,66204  
341-1234

35 F 3506 62 P  
GILLEN, BILLY A. 8802 BIRCH LANE,66207

29 M 1902 54 ANES  
GOLLERKERI, MOHAN P. 7301 MISSION RD STE 339,66208  
236-8866

30 M 49516 52 HEM  
GOMEZ, FRANCISCO, 4200 SOMERSET #160,66208  
649-7300

15 M 26401 43 P  
GOOD, WENDELL Lisle, 4601 W 109TH,66211  
649-3883

24 M 1902 48 FP  
GOSALIA, ANIL V. 11701 MACKEY,66210  
334-2500

46 M 49501 64 GP  
GROSSMAN, HARVEY M. 4601 W 109TH SUITE 122,66211  
642-4040

49 M 1902 74 PO  
GRUNOMEIER, ANNETTE M. 6618 W 76TH TERR,66204  
321-3055

46 F 1611 77 PO  
HACKER, DAVID CHARLES, 6900 W 67TH,66202  
588-6670

50 M 1902 75 ANES  
HAMTIL, LAWRENCE W. 10550 QUIVIRA RD,66215  
649-6722

36 M 2803 61 PO  
HANOLEY, DENNIS MICHAEL, 8650 W COLLEGE BLVD,66210  
649-1311

50 M 2803 76 FP  
HARMS, ALBERT C. 5750 WEST 95TH,66207  
381-5550

13 M 1902 38 FP  
HARPSTER, GENE D. 10550 QUIVIRA SUITE 430,66215  
648-1400

31 M 1902 57 GS  
HARTONG, WILLIAM A. 8901 W 74TH STE 372,66204  
831-9300

44 M 1902 71 IM  
HASTINGS, MARY T. 2520 W 50TH PL,66205

45 F 1902 77 O  
HATHAWAY, PETER, 11055 CEDAR STE 216,66211  
383-2270

31 M 3503 60 IM  
HENRY, JOSEPH E. 8901 W 74TH,66204  
432-8000

42 M 1902 68 PUO  
HERZON, CHARLES D. 8951 W 75TH,66204  
649-9010

39 M 3006 65 OBG  
HESSER, HERBERT H. 7207 EDGEWOOD BLVD,66203

06 M 1902 34 OO  
HIEBERT, PETER E. 9021 SALEM DR,66215  
371-4343

03 M 1902 34 R  
HILL, ROONEY W. 8901 W 74TH SUITE 208,66204  
362-6161

47 M 1902 74 IM  
HOBSON, MILBURN W. 9119 W 74TH ST,66204  
831-2334

30 M 1902 55 OBG  
HOOES, HERBERT C. 5007 W 112TH,66211  
381-6868

43 M 1902 69 OBG  
HOOGES, BRUCE E. DOCTORS BLDG SUITE 430,66215  
888-0777

32 M 1902 63 FP  
HOPKINS, WILLIAM D. 10000 W 75TH,66204  
831-3500

33 M 2803 61 ORS  
HOPKINS JR, LENLY T. 8600 W 95TH ST,66212  
649-7844

30 M 3841 56 GS  
HORSEMAN, ROBERT F. 9119 W 74TH ST,66204  
432-7419

19 M 1902 44 OBG  
HOUSTON II, LAWRENCE MORLEY, 8650 W COLLEGE BLVD,66210  
649-1311

50 M 2803 76 FP  
HUANG, GEORGIANA L W. 6300 GLENWOOD #3,66202  
384-4998

41 F 4107 75 GP

HUMPHREY, LOREN JENKINS, 9119 W 74TH SUITE G-1,66204  
384-2850

31 M 1611 56 SON  
ITURRALOE, GEORGE, 7501 MISSION RD,66208  
648-4949

21 M 13201 49 P  
JACKSON, ROBERT V. 8901 W 74TH SUITE 150,66204  
362-1660

49 M 2803 77 PO  
JANES, DONALD R. 10550 QUIVIRA #360,66215  
492-1955

34 M 1902 60 OBG  
JOHNSON, NAQINE KAY, 10550 QUIVIRA,66215  
492-6200

38 F 1803 63 IM  
JONES, CHARLES E. SHAWNEE MISSION MED CNTR,66201  
676-2214

31 M 1902 60 FP  
JONES, H IVCR, 8901 W 74TH SUITE 269,66204  
362-4040

24 M 80303 51 P  
JOUVENAT, NEIL C. 10550 QUIVIRA SUITE 120,66215  
492-1844

43 M 3005 71 OBG  
KADIAN, RAJESH S. 10550 QUIVIRA 5TH FLOOR,66215  
492-6200

50 M 71 IM  
KAGAN, STUART M. 10550 QUIVIRA - SUITE 340,66215  
492-1111

44 M 4901 69 PO  
KASHYAP, BANSHI PRASAD, 8901 W 74TH SUITE 257,66204  
236-4500

47 M 49554 69 IM  
KENNEDY, KENNETH R. 6100 MARTWAY STE 11,66202  
432-0126

24 M 1902 53 FP  
KETCHUM, LYNN D. 10550 QUIVIRA RD STE 310,66215  
492-3737

36 M 2101 60 PS  
KIMURA, CHARLES C. 8901 W 74TH,66204  
262-4220

25 M 2101 56 A  
KODANAZ, A AYTEKIN, 5710 REINHARDT DR,66205  
334-2500

28 M 90201 55 ANES  
KOZIKOWSKI, BEN M. 7301 MISSION RD,66208  
362-8317

30 M 2834 55 ORS  
KRUEGER, KURT ALLEN, 10002 HOWE DR,66206  
676-2479

48 M 3006 74 ANES  
KUBIN, DORIS A. 2504 W 71ST,66208

15 F 1902 43 OO  
KURTH, PAUL H. 5555 W 58TH,66202  
432-2080

53 M 2507 77 IM  
KURTH, ROBERT H. 5555 W 58TH,66202  
432-2080

28 M 3005 53 IM  
LAPI, RUTH M. 2012 STRATFORD RD,66208

14 F 4107 37 OO  
LEATHERS III, HOLLIS K. SHAWNEE MISSION MED CNTR,66201  
676-2340

38 M 3901 64 PATH  
LEGASPI JR, PEDRO L. SHAWNEE MISSION MED CNTR,66201  
676-2479

36 M 74801 60 ANES  
LEIGH, LAWRENCE E. 8020 SANTA FE DR,66204  
642-4080

12 M 1902 41 FP  
LERNER, SCOTT A. 8901 W 74 SUITE 348,66204  
432-8000

47 M 1902 73 PM  
LESTER, JOHN BUCKLES, 4140 W 71ST SUITE 108,66208  
432-7276

45 M 1902 70 P  
LEWIN, WALTER, 8901 W 74TH ST,66204  
362-4040

30 M 1902 56 P  
LEWIS, JAMES E. 3700 W 83RD SUITE 203,66208  
649-0923

37 M 2101 63 P  
LIPSEY, JAMES H. 10000 W 75TH SUITE 103,66204  
831-3500

31 M 1606 56 ORS  
LOREN, MICHAEL LEWIS, 5300 W 94TH TERR,66207  
381-4674

48 M 2507 73 PED  
LULD, ANTONIO R. 7600 STATE LN,66208  
649-3900

35 M 30801 60 IM

MALLORY, JOHN A. 10550 QUIVIRA 5TH FLOOR,66215

492-6200

43 M 2803 71 IM

MANLEY, JOSEPH W. 4601 W 109TH SUITE 306,66211

381-8838

42 M 1902 69 08G

MANTZ, FRANK A. 9309 W 103RD,66212

-

12 M 4101 38 00

MARVIN, NORMAN G. WYCLIFF SHOPPING CENTER,66212

541-8282

29 M 1902 56 FP

MASER, GEORGE R. 5811 NALL,66202

432-5515

12 M 1902 36 FP

MATHEWS, ROBERT MAJOR, 7301 MISSION RD,66208

362-6888

25 M 1902 54 GS

MAXWELL, ROBERT A. 8901 W 74TH - SUITE 150,66204

362-1660

46 M 1902 73 PD

MCCAUGHEY, HUGH W. 11055 CEDAR SUITE 210,66211

381-1724

28 M 1902 53 1M

MCEACHEN, WILLIAM H. 3700 WEST 83RD SUITE 102,66208

649-3335

32 M 1902 59 PD

MCELROY, MICHAEL B. 6300 GLENWOOD,66202

432-1122

43 M 2803 69 ORS

MCGURK, THOMAS E. 4601 W 109 SUITE 206,66211

649-2080

39 M 2803 65 P

MCWHERTER, LOTTIE B. 5920 NALL SUITE 308,66202

362-1464

30 F 1902 57 1E

MENEZ, CESAR V. 4121 W 83RD SUITE 120,66208

381-4484

36 M 74810 56 P

MILLER, FREEMAN LANCE, DOCTOR'S BLDG,66215

492-6200

48 M 1902 74 PD

MISKEW, DON B W. 7301 MISSION RD SUITE 348,66208

362-8317

42 M 6506 69 ORS

MOFFAT, ROBERT E. C/O RADIOLOGY ASSOCIATES,66204

588-6800

42 M 1902 68 DR

MORONEY, JEAN M. 10550 QUIVIRA,66215

492-6200

25 F 4109 65 N

MUEHLBERGER, JAMES J. 4601 W 109TH SUITE 314,66211

383-3222

34 M 3006 60 PD

MUELLER, J KENT, 3700 WEST 83RD SUITE 203,66208

649-0923

35 M 1902 62 P

MURPHY, JAY W. 8901 W 74TH SUITE 208,66204

362-6161

49 M 3840 73 CO

MURRAY, W LEE, 4601 W 109TH, 66211

381-2931

35 M 1902 61 OPH

NASH, ROBERT A. 4601 W 109TH,66211

649-8686

31 M 1902 55 P

NAUER, PAULA LOU, 7301 MISSION RD STE 342,66208

384-0745

49 F 1902 74 FP

NAVICKAS, LEONARD A. 8901 W 74TH SUITE 225,66204

362-5510

53 M 1902 77 FP

NEIBURGER, JAMES B. 5300 W 94TH TERR,66207

381-4674

46 M 1642 72 A

NELSON, BRYAN C. 9119 W 74TH,66204

384-5500

50 M 1902 75 PD

NELSON, JOHN B. 10550 QUIVIRA SUITE 510,66215

492-6200

48 M 2846 75 PUD

NIEMAN, JOHN L. PO BOX 7426,66207

381-8282

28 M 3806 58 PO

NOSTI, JUAN C. 8901 W 74TH #345,66204

262-5014

38 M 13204 63 PS

NYE, C ERICK, 7301 MISSION RD SUITE 348,66208

362-8317

39 M 3520 65 ORS

O'BRYAN, JAMES J. 10550 QUIVIRA,66215

492-2525

47 M 1902 73 PD

O'CONNELL, FRANK A. 7830 STATE LINE,66208

381-0886

25 M 1902 51 FP

OKTAWIEC, DANUTA, 5848 FONTANA DRIVE,66205

-

22 F 80303 50 ANES

PATTERSON, JOHN R. 5317 CHADWICK RD,66205

-

20 M 1902 48 PD

PEARCE, EUGENE W J. 9119 W 74TH SUITE 104,66204

722-3102

24 M 2802 49 08G

PEARCE, LUNETTA M. 9119 W 74TH,66204

362-1525

26 F 3005 49 FP

PENTECOST, RICHARD L. 8900 STATE LINE SUITE 350,66206

383-1410

32 M 1001 56 P

PERICO, CARLOS J. 9209 ROE,66207

888-0777

32 M 26404 60 FP

PETERSEN, A GENE, 3700 W 83RD,66208

648-3911

27 M 1902 54 1M

PETERSEN, GERALD D. 3700 WEST 83RD,66208

648-3911

30 M 1902 60 1M

PETIT, CARL ALFONSO, 10550 QUIVIRA SUITE 480,66215

541-8800

33 M 60 GS

PETRIE, SAMUEL C. GEORGETOWN MED BLDG,66202

722-1166

27 M 1902 58 1M

PETTEGREW, PAULINE K. 5600 W 95TH SUITE 105,66207

381-6765

21 F 3006 50 FP

PFUETZE, BRUCE L. 4601 W 109TH,66211

383-3630

42 M 1902 68 A

PFUETZE, KARL O. 10550 QUIVIRA 5TH FLOOR,66215

492-6200

40 M 1902 66 CO

PHILLIPS, WARREN G. 3700 W 83RD,66208

649-0923

26 M 1902 60 P

PILCHARD, WILLIAM A. GEORGETOWN MED BLDG,66204

632-3210

39 M 1602 65 OPH

PINGLETON, WILLIAM WARREN, 8901 W 74TH SUITE 348,66204

432-8000

42 M 3901 67 PUD

PITTS, RONALD L. 8901 W 74TH - SUITE 330,66204

362-2524

35 M 2002 62 D

POWELL, CAROL W. 8216 CHEROKEE CIRCLE,66206

381-3785

25 F 1902 51 P

POWELL, KENNETH A. 8216 CHEROKEE CIRCLE,66206

753-7000

25 M 1902 53 1M

PRONKO, MICHAEL J. 4121 W 83RD SUITE 223,66208

648-7878

34 M 1902 60 P

RACELA JR, ANTONIO S. SUBURBAN MEDICAL CENTER,66215

492-1000

37 M 74802 63 PATH

RADOM, SANFORD B. 2304 W 121ST,66209

677-0883

40 M 1642 66 R

RALSTIN, JAMES H. 14708 W 71ST TERR, 66216

299-2069

49 M 1902 74 1M

REIVICH, RONALD S. 11030 GRANADA LANE,66211

383-3050

34 M 3806 60 P

RICE, BERNARD F. 8901 W 74TH,66204

262-4220

31 J 4113 56 END

RICHTER, DON G. SHAWNEE MISSION MED CTR,66201

676-2464

50 M 1902 79 ANES

RICK JR, GREGORY G. THE GEORGETOWN MED BLDG,66204

831-9300

40 M 1902 66 GE

RIEKE, FRANK A. 10411 WEST 55TH,66203

-

16 M 1902 41 00

ROBERTSON, EDWARD J. SHAWNEE MISSION MED CTR,66201

676-2464

46 M 1902 78 ANES

ROBISON, JAMES T. 8800 W 75TH SUITE 310,66204

588-6600

21 M 4812 45 OPH



ROSENBERG, STANTON L. 1900 W 75TH SUITE 200.66208  
362-8080  
30 M 1902 55 P  
ROSENTHAL, RICHARD. 5102 W 112TH ST.66211  
492-1000  
50 M 2820 76 EM  
RUBIN, HERBERT M. 10550 QUIVIRA - SUITE 340.66215  
492-1111  
37 M 2802 63 PD  
RUMOLD, MERVIN J. 6340 INDIAN LANE.66208  
-  
03 M 1902 30 GS  
RYAN, MICHAEL E. 4601 W 109TH SUITE 210.66211  
341-4030  
46 M 1902 72 N  
RYMER, ROBERT A. 8901 W 74TH SUITE 373.66208  
722-0170  
41 M 0702 68 OPH  
SAFFO, KARL S. 8901 W 74TH.66204  
362-9585  
39 M 52801 62 PS  
SATHYANARAYANA, SARASWATHI. 9119 W 74TH.66204  
432-7419  
45 F 49509 67 OBG  
SAWKAR, LAXMIDAS A. 8901 W 74TH SUITE 312.66204  
384-4844  
36 M 49523 63 IM  
SCHAEFER, JCSEPH PETER. 10550 QUIVIRA - SUITE 230.66215  
492-7440  
34 M 1902 60 IM  
SCHROLL, JOHN T. 8901 W 74TH.66204  
384-4990  
51 M 1902 76 OBG  
SCLAR, WILLIAM C. DOCTORS BLDG SUITE 450.66215  
492-7730  
46 M 2501 72 GS  
SHAAD, DCROTHY J. 2322 W 51ST.66205  
-  
09 F 1902 44 OO  
SHOFSTALL, WILLIAM H. 6100 MARTWAY.66202  
722-4747  
11 M 3901 41 ENT  
SIMMONS, THOMAS H. 7108 MASTIN. 66203  
-  
M IM  
SMITH, DALE C. 4601 W 109TH ST SUITE 224.66211  
381-0353  
20 M 1902 45 OPH  
SMITH, DAVID E. 6523 W 49TH.66202  
588-6100  
50 M 1902 76 GS  
SMITH, DONALD J. 8600 W 95TH ST.66212  
642-4515  
18 M 1902 49 FP  
SNODELL, FIRMIN E. 5555 W 58TH.66202  
432-2080  
31 M 1902 61 IM  
SNOW JR, ARTHUR D. 8901 W 74TH - SUITE 225.66204  
685-7234  
45 M 1902 75 FP  
SOELDNER, JAMES OLIVER. 9124 DEARBORN DR.66207  
782-8600  
44 M 1902 70 FP  
SPEER, FREDERIC. 5811 OUTLOOK.66202  
432-0625  
09 M 1902 34 A  
STEINER, ROBERT M. 5311 W 96TH TERRACE.66207  
677-0883  
39 M 4112 65 R  
STEINZEIG, ALFRED S. 6500 HODGES DR.66208  
-  
13 M 1902 37 OO  
STEVENSON, E KENT. 4121 W 83RD SUITE 150.66208  
649-5566  
45 M 2802 67 CHP  
STITT, RONALD W. 4221 W 104TH TERR.66207  
342-7233  
21 M 1902 45 U  
STRIEBINGER, CHARLES M. 4601 W 109TH.66211  
341-7299  
45 M 1803 67 NS  
STUBER, JACK LAWRENCE, PO BOX 4250.66204  
677-0883  
40 M 1902 66 DR  
STUCKEY, CHARLES E. 10550 QUIVIRA SUITE 240.66215  
492-7737  
41 M 3005 68 GS  
SUGAR, ROBERT L. 8901 W 74TH #248.66204  
384-4990  
40 M 3508 66 OBG  
SULLIVAN JR, HENRY B. 5817 NIEMAN RD.66203  
631-6160  
24 M 1902 52 FP

SUTTON JR, RICHARD L. 3203 W 83RD TERR.66206  
-  
08 M 2501 29 OO  
TALLEY, ROBERT L. 9118 RIGGS LANE APT D.66212  
588-3000  
48 M 4802 74 IM  
TENNY, ROBERT T. 4601 W 109TH SUITE 307.66211  
341-7299  
51 M 1902 76 NS  
TETZLAFF, ARCHIBALD C A. 4520 W 65TH.66208  
334-2500  
26 M 40721 52 ANES  
THOMSEN, GARY. 8901 W 74TH.66204  
362-5510  
51 M 3005 76 FP  
TOALSON, WILLIAM B. 8901 W 74TH #208.66204  
371-3515  
37 M 1902 63 CD  
TRETBAR, LAWRENCE L. 8901 W 74TH.66204  
677-1776  
33 M 1902 60 GS  
TROPP DO, ARNOLD L. 8600 W 95TH STE 102.66212  
648-5600  
46 M 2878 72 FP  
TUCKER, SHERIDAN G. 7801 W 96TH.66212  
-  
50 M 1902 75 P  
TUTERA, GINO. 10550 QUIVIRA SUITE 120.66215  
492-1844  
45 M 2803 71 OBG  
VALK, WILLIAM L. 5401 W 81ST.66208  
588-6146  
09 M 2501 37 U  
VANNAMAN, DONALD D. P O BOX 7426.66207  
381-8282  
43 M 1902 71 PD  
WALKER, WILLIAM L. 10500 QUIVIRA.66215  
492-1000  
44 M 1902 70 R  
WANG, SIDNEY W. 10550 QUIVIRA RD.66215  
722-2020  
32 M 38503 58 FP  
WEARE, MARY E. 7301 MISSION RD #304.66208  
362-7224  
48 F 4002 73 P  
WEBB, JAMES R. 5949 NIEMAN ROAD.66203  
631-0900  
34 M 1902 61 FP  
WEISMAN, EDWARD B. 5025 LAMAR APT 1.66202  
432-1699  
24 M 4101 47 P  
WERTH, CLAUDE J. 4121 W 83RD.66208  
649-5566  
37 M 1902 64 P  
WHITEHEAD, RICHARD E. 7301 MISSION RD.66208  
362-8317  
31 M 2501 58 ORS  
WHITLEY, DOUGLAS M. 4601 W 109TH SUITE 202.66211  
341-4770  
34 M 1902 60 D  
WIGGINTON, GERALD D. D.O.. 9119 W 74TH.66204  
384-5500  
44 M 2878 70 PD  
WILEY, JOHN H. 9119 W 74TH ST.66204  
831-2334  
37 M 4113 63 OBG  
WILSON, L BARRICK. 5602 FAIRWAY RD.66205  
-  
09 M 1902 35 OO  
WILSON, ROBERT B. 7301 MISSION.66208  
362-3356  
10 M 1902 40 ENT  
WILSON, SLOAN J. 5618 W 62ND.66202  
-  
10 M 1902 36 HEM  
WURSTER, GEORGE R. 3700 W 83RD SUITE 203.66208  
649-0923  
35 M 1902 61 P  
YE, RICHARD C. 7301 MISSION RD.66208  
362-7505  
20 M 24222 46 PS  
YOHE, RUTH M. 8600 W 95TH ST.66212  
383-3377  
26 F 4107 54 PDA  
YOUNG, JOHN W. 7301 MISSION RD SUITE 317.66208  
362-7505  
37 M 4706 63 PS  
YOUNGLOVE, R HAL. 10550 QUIVIRA SUITE 510.66215  
492-6200  
50 M 3005 75 OBG  
YOUNGSTROM, KARL A. 9660 REEDER PLACE.66214  
-  
08 M 3607 44 OO

ZACK, ASHLEY S. 4601 WEST 109TH SUITE 122.66211  
 642-4040  
 46 M 2803 73 PO  
 ZAMIEROWSKI, OAVIO S. 8800 W 75TH SUITE 340.66204  
 831-4113  
 42 M 2307 68 PS  
 ZIMMERMAN, DANIEL D. 4761 RAINBOW.66205  
 236-7810  
 45 M 3005 70 1M

**SMITH CENTER—913**  
*(Central Kansas Society)*

RELIHAN, FRANCIS H. 116 SOUTH MAIN.66967  
 282-3291  
 84 M 1606 07 FP  
 SHEPPARD, ROBERT G. 120 E COURT.66967  
 282-6654  
 21 M 1902 45 GS  
 STEINKRUGER, VERLYN WILLIAM. 120 E COURT.66967  
 282-6654  
 28 M 3005 53 FP  
 WOODS, HUGH J. 120 EAST COURT.66967  
 282-6654  
 26 M 1902 52 FP

**SOUTH HAVEN—316**  
*(Tri-County Society)*

UBELAKER, ERNEST J. .67140  
 892-2261  
 11 M 1902 38 FP

**ST. FRANCIS—913**  
*(Northwest Kansas Society)*

CRAM, ERNEST R. PO BOX 625.67756  
 332-2126  
 24 M 1902 52 FP  
 JEWELL, ROSS L. 203 SPENCER.67756  
 332-2832  
 13 M 1902 56 FP  
 STEPHENSON, LUCILLE C. .67756  
 -  
 06 F 1902 32 FP  
 WALZ, THOMAS J. 115 SOUTH QUINCY.67756  
 -  
 94 M 1902 21 00

**ST. JOHN—316**  
*(Butler-Greenwood County Society)*

QUACKENBUSH, ROBERT P. .67578  
 549-3471  
 21 M 1611 52 FP  
 SCHERER, ALFRED L. 610 E FIRST.67576  
 549-3261  
 32 M 1902 57 FP

**ST. MARYS—913**  
*(Pottawatomie County Society)*

BROWN, FRED E. 602 W PALMER.66536  
 437-2256  
 26 M 1902 55 FP

**STAFFORD—316**  
*(Butler-Greenwood County Society)*

BROWN, C EVERETT. 102 N MAIN.67578  
 234-5251  
 10 M 1902 47 A  
 WARD, ROBERT L. 412 E GRAND.67578  
 234-5281  
 24 M 1902 52 FP

**STERLING—316**  
*(Rice County Society)*

OYSART, JACK C. 112 S BROADWAY.67579  
 278-2181  
 12 M 3901 39 GP  
 SIMPSON, TOM C. 239 N BROADWAY.67579  
 278-2123  
 47 M 1902 73 FP

**STOCKTON—913**  
*(Central Kansas Society)*

MAUCK, HAROLD C. 623 SOUTH 2ND.67669  
 425-6280  
 20 M 1902 54 FP  
 VOTAPKA, WILLIAM L. 623 S SECOND.67669  
 425-6280  
 24 M 1902 53 FP

**SYRACUSE—316**  
*(Southwest Kansas Society)*

PETTERSON, CECIL E. PROFESSIONAL ASSOCIATION.67878  
 384-5731  
 14 M 1902 39 FP

**TONGANOXIE—913**  
*(Leavenworth County Society)*

STEVENS, PHILIP L. 80X 319.66086  
 845-2090  
 27 M 1902 54 FP

**TOPEKA—913**  
*(Shawnee County Society)*

AGAN, LAWRENCE M. 1314 PEMBROKE LN.66604  
 357-4306  
 20 M 5002 44 R  
 ARMSTRONG, A L. 918 W TENTH.66604  
 233-9681  
 41 M 2012 73 GS  
 ARREGONDO, MARIO. 6024 SW 26TH.66614  
 296-7216  
 25 M 26401 54 P  
 ARUNAKUL, PUNYA. TOPEKA MEO CENTER.66604  
 233-9681  
 44 M 89104 69 OTO  
 ASHLEY, BYRON J. 3222 PLASS.66611  
 233-2280  
 98 M 1902 24 OPH  
 ASHLEY JR, 8 JOHN. 1616 WEST 8TH ST.66606  
 233-2280  
 31 M 1902 56 OPH  
 ATLURU, NARAYANA RAO. 5207 W 11TH TERR.66604  
 232-8761  
 47 M 49550 69 ANES  
 AVERILL, STUART C. MENNINGER FD.66601  
 234-9566  
 24 M 502 52 P  
 BAEHR, RALPH H. S-F CAP REG RAD10THER CTR.66606  
 234-3451  
 35 M 1606 59 R  
 BAIR, GLENN O. 634 MULVANE SUITE 400.66606  
 233-5153  
 31 M 2401 57 1M  
 BAKER, FREDERICK C. 2101 WEST 10TH.66604  
 232-0909  
 35 M 4113 62 FP  
 BAKER, PHILLIP L. 300 CONT MEO BLOG.66606  
 357-0301  
 37 M 3005 63 ORS  
 BAKER, RAY O. PO BOX 118.66601  
 233-8961  
 30 M 4812 55 GPM  
 BARABAN, MARC R. 1319 HUNTOON.66604  
 357-5325  
 50 M 2846 75 PS  
 BARNHILL, C ALTON. MENNINGER FO.66601  
 234-9566  
 31 M 3601 56 P



BAUCOM, KARAN YVONNE, 1516 W SIXTH, 66604

233-1639

50 F 1902 75 OBG

BAUCOM-COPELAND, SHARON LAVARNE, 2301 SW 6th, 66606

50 F 2846 75 FP

BAUDE, EUGENE L ANDRE, 1815 WESTWOOD CIRCLE, 66604

354-1946

02 M 39606 27 IM

BEACH, RICHARD R, 106 MED ARTS BLDG WEST, 66604

233-7943

23 M 2802 48 IM

BEALE, DAVID A, MENNINGER FD, 66601

234-9566

31 M 5404 56 P

BEATY, JAMES R, 1700 WEST 7TH, 66606

354-1111

32 M 5101 66 EM

BECK, JOSEPH D, 2760 SW BURLINGAME, 66611

18 M 3005 43 OD

BEOFDRD, D R, 6423 HUNTOON, 66601

09 M 4802 40 IM

BEELMAN, FLOYD C, 1286 LAKESIDE DR, 66604

02 M 3840 35 FP

BELLER, WILLIS L, 3651 HOLLY LANE, 66604

14 M 1902 41 OD

BERLAND, DAVID I, 80X 829, 66601

234-9566

47 M 2803 78 P

BLAKE, HENRY S, 1933 WESTWOOD DR, 66604

11 M 3520 37 OD

BONEBRAKE, C RICHARD, 634 MULVANE, 66606

233-1979

48 M 1606 75 OBG

BOREL, DAVID, ST FRANCIS HOSP &amp; MED CTR, 66606

295-8473

45 M 1902 71 PATH

BOWEN, CLOVIS W, 2200 WEST 10TH, 66604

234-8601

12 M 1902 37 FP

BOWEN JR, HARRY J, 2200 WEST 10TH, 66604

234-8601

11 M 1902 37 FP

BOYD, SPENCER H, 1815 WEST 2ND, 66606

11 M 1902 35 OBG

BRAUN, ROBERT W, 901 GARFIELD, 66606

395-9591

44 M 2803 70 IM

BRAUNSDORF, ROBERT L, 2625 DHIO, 66605

354-7630

08 M 2501 35 FP

BRIDWELL, RUSSELL E, 1710 W TENTH, 66604

234-2624

26 M 1902 51 ENT

BROCHER, TOBIAS, PO BCX 829, 66601

234-9566

17 M 40733 42 P

BURDZIK, EBERHARD G, 2700 W SIXTH, 66606

296-4222

26 M 40916 54 P

BYLANDER DD, TERESA I, 3556 SW CAMBRIDGE, 66614

272-3111

46 F 1875 77

CARVER, LARRY A, 130 CONT MED BLDG, 66606

234-8653

37 M 1902 73 P

CASHMAN JR, MAURICE R, 901 GARFIELD, 66606

354-9591

35 M 1902 61 HEM

CAVANAUGH, JOHN W, 200 PROFESSIONAL BLDG, 66604

235-3488

13 M 1803 39 GS

CHAMBERLIN JR, CECIL R, 80X 829, 66601

234-9566

30 M 3901 55 CHP

CHANG, FDNG CHUNG, 303 MEDICAL ARTS BLDG, 66604

235-3451

40 M 38505 68 ANES

CHEN, TAK-MING, 303 MED ARTS BLDG, 66604

234-3451

41 M 24402 68 ANES

CHERRY JR, ARTHUR C, 918 WEST 10TH, 66604

233-9681

27 M 3806 53 PD

CHEUNG, P W H, 918 WEST 10TH, 66604

233-9681

36 M 24338 58 R

CLARK, CRAIG N, 3124 E 6TH, 66607

354-7683

29 M 1902 58 FP

COCHRAN, PAUL W, MENNINGER FD, 66601

234-9566

33 M 4802 58 IM

COHEN, LOUIS, 918 W 10TH, 66604

233-9681

14 M 1902 41 IM

COKELEY, JOHN M, 2200 GAGE BOULEVARD, 66622

272-3111

30 M 5101 55 P

COLLINS, DEAN T, MENNINGER FD, 66601

234-9566

28 M 1902 55 P

COLLINS, EDWARD JDSEPH, 900 WASHBURN, 66606

233-3242

45 M 1611 71 DPH

COLLINS, ELISABETH B, 340 WOODBURY LANE, 66606

296-4821

21 F 40905 46 P

COLLINS, FRANCIS T, 206 MED ARTS BLDG EAST, 66604

233-6470

14 M 1902 43 IM

CONNELLY, JOHN C, MENNINGER FD, 66601

234-9566

39 M 3806 65 P

CONROY, ROBERT W, MENNINGER FD, 66601

234-9566

38 M 2604 64 P

COOLEY, DENNIS M, TOPEKA MEDICAL CENTER, 66604

233-9681

51 M 1902 77 PD

COPELAND, SHARON LAVARNE, 2301 W SIXTH, 66611

588-7535

50 F 1902 75 FP

COTTON, ROBERT T, 901 GARFIELD, 66606

354-9591

19 M 1902 45 IM

CRARY, JOHN E, 201 MED PLAZA BLDG, 66604

233-4202

18 M 1902 43 IM

CRDUCH, WILLIAM H, 904 MULVANE, 66606

232-8224

20 M 2802 45 PD

DAVIS, CHESTER R, 631 HORNE, 66606

232-9394

50 M 1902 75 FP

DELGADO, SERGIO, 634 MULVANE, 66606

357-0352

37 M 2501 62 ORS

DESOIGNIE, RAFAEL R, 2400 W 29TH #124, 66611

267-0150

19 M 27501 P

DUNAGIN, JACK A, 918 W 10TH, 66604

233-9681

20 M 1902 44 P

DURST JR, ROBERT D, CONTINENTAL MED BLDG, 66606

357-5166

42 M 2803 69 D

EATON, EDWARD L, 918 W TENTH, 66604

233-9681

40 M 0401 73 P

ELDER, DOUGLAS M, 310 MED ARTS BLDG, 66604

234-3451

41 M 1902 69 OR

FAIRCHILD, RICHARD S, 901 GARFIELD, 66606

354-9591

48 M 1902 76 IM

FEAGAN, JERRY, 901 GARFIELD, 66606

354-9591

39 M 1902 63 GE

FERNANDEZ, LUIS A, PD 8DX 118, 66601

233-8961

14 M 27501 41 PD

FIELD, RICHARD A, 303 MEDICAL ARTS BLDG, 66604

235-3451

29 M 1902 55 ANES

FILLMAN, ELDON M, 301 MEDICAL PLAZA BLDG, 66604

233-4256

20 M 1611 44 U

FORD, FRED L, 220 MEDICAL ARTS BLDG, 66604

234-5516

11 M 2501 36 GS

FOSTER, CHARLES G, 110 CDNT MED BLDG, 66606

232-6964

21 M 4102 47 IM

FOSTER, D BERNARD, 3111 JEWELL, 66611

-

14 M 2501 38 NP

FROST, ALAN P, 116 FAIRLAWN RD, 66606

234-3451

45 M 0301 76 RN

FUSILLO, MICHAEL, BOX 829,66601  
 234-9566  
 48 M 3508 74 P  
 GANDHI, SHANTIKUMAR K, 40 MED ARTS BLOG,66604  
 233-1710  
 40 M 49501 67 TS  
 GANZARAIN, RAMON C, MENNINGER FD,66601  
 234-9566  
 23 M 23101 47 P  
 GAY, JOHN O, 310 MED ARTS BLOG,66604  
 234-3451  
 42 M 4802 68 OR  
 GENOEL, JOSEPH E, 918 W 10TH,66604  
 233-9681  
 12 M 4804 37 ORS  
 GIESSEL, MICHAEL O, CCNTINENTAL MED BLOG,66606  
 357-5166  
 48 M 1902 74 O  
 GIMPLE, KENNETH, 631 HORNE #200,66606  
 233-7491  
 45 M 1902 71 ORS  
 GLEASON, JIMMIE A, 800 LINCOLN,66606  
 233-5101  
 33 M 1902 58 OBG  
 GOOFREY, KENNETH E, 9550 SW 53RD,66604  
 273-6153  
 18 M 3901 50 P  
 GOERING, EMIL L, 600 MADISON,66607  
 354-5100  
 27 M 1902 57 IM  
 GOOTEE, JOSEPH E, 3204 W 17TH,66604  
 -  
 21 M 2834 47 OO  
 GRAHAM JR, CHARLES P, 631 HORNE #400,66606  
 354-9504  
 40 M 3601 65 GS  
 GRAY, DAVIO E, PO BOX C-50,66601  
 234-8621  
 16 M 1606 42 GEN  
 GRAY18, ANTOINE S, MEMORIAL HOSP,66607  
 354-5100  
 18 M 60501 46 IM  
 GREENBERG, MARK, 310 MED ARTS BLOG,66604  
 234-3451  
 46 M 1611 72 R  
 GREENE, HORACE T, 1710 W 10TH,66604  
 354-7508  
 15 M 401 42 FP  
 GREENWOOD, EDWARD O, 3617 W 6TH,66601  
 234-9566  
 01 M 702 38 CHP  
 GREER, RICHARD H, 918 W 10TH,66604  
 233-9681  
 09 M 1902 39 IM  
 GUTOVITZ, ALLEN LOUIS, BROCK MEDICAL PLAZA,66606  
 233-9643  
 46 M 1611 72 CD  
 HACKER, ELAINE MARY, 3026 QUAIL CREEK,66614  
 296-3981  
 25 F 2604 50 OBG  
 HAINES, ROBERT A, 2700 SIXTH,66606  
 296-3436  
 16 M 3841 42 P  
 HALLEY, M MARTIN, 40 MED ARTS BLOG,66604  
 233-1710  
 27 M 2401 53 TS  
 HAMILTON, NORMAN G, BCX 829,66601  
 234-9566  
 51 M 1902 76 FP  
 HARRIS, HUBERT L, 210 MED ARTS BLOG,66604  
 233-3151  
 12 M 1803 39 O  
 HARRIS, PATRICIA A, 1617 W 26TH,66611  
 354-1906  
 29 F 1902 54 IM  
 HARRISON, HALL E, 901 GARFIELD,66606  
 354-9591  
 39 M 2802 65 IM  
 HARTOCOLLIS, PETER, MENNINGER FD,66601  
 234-9566  
 22 M 86905 55 P  
 HEBBAR, SATYA N, BROCK MEDICAL PLAZA,66606  
 233-9643  
 39 M 49509 62 CD  
 HERRERA, JORGE J, 2825 CALIFORNIA,66605  
 354-5100  
 27 M 64901 55 IM  
 HIEBERT, JOHN B, 901 GARFIELD,66606  
 354-9591  
 40 M 1902 68 CO  
 HILL, ROBERT N, 901 GARFIELD,66606  
 354-9591  
 14 M 1902 67 IM  
 HILST, WILBUR O, 1271 WOODHULL,66614  
 273-5870  
 31 M 3005 55 GS  
 HIRSCHBERG, J COTTER, MENNINGER FD,66601  
 234-9566  
 15 M 1602 40 CHP  
 HISZCZYNSKYJ, ROMAN, 1500 W TENTH,66604  
 354-6870  
 35 M 1803 66 PATH  
 HOBBS, DONALD O, 200 CONTINENTAL MED BLDG,66606  
 233-7491  
 28 M 2401 54 ORS  
 HOHERZ, DAVIO G, 631 HORNE SUITE 220,66606  
 235-1170  
 45 M 1902 76 TS  
 HORNE JAMES B, 825 WESTERN, 66606  
 233-1730  
 26 M 1606 52 P  
 HOSTETTER, JAMES P, 1500 W TENTH,66604  
 354-6100  
 43 M 1902 69 EM  
 HOYT, ARTHUR W, 2055 CLAY,66604  
 234-5663  
 14 M 2501 40 P  
 HSU, CHENG H, 1516 W SIXTH,66606  
 233-9681  
 41 M 38502 66 U  
 HSU, SHIN-FU, MEDICAL PLAZA BLOG,66604  
 232-0362  
 43 M 24402 68 OTO  
 HUSTON, JOSEPH W, 634 MULVANE,66606  
 357-0352  
 35 M 1902 62 ORS  
 HUTTON, FREDERICK A, 102 MED PLAZA BLOG,66604  
 234-0553  
 29 M 6701 58 PS  
 HYLAND, JOSEPH M, BOX 829,66601  
 234-9566  
 45 M 53902 68 P  
 ILIFF, R DOUGLAS, 1500 SW OAKLEY,66604  
 354-6100  
 49 M 1902 74 FP  
 ISAACSON, RICHARD N, TOPEKA MEDICAL CENTER,66604  
 233-9681  
 48 M 2501 75 U  
 JACKSON, LINDA H, 212 WOODLAWN AVE,66606  
 234-9566  
 42 F 3601 67 CHP  
 JACOBY II, ROBERT E, 340 CONT MED BLOG,66606  
 232-9394  
 46 M 2307 72 FP  
 JANSSEN, ERWIN T, MENNINGER FD,66601  
 234-9566  
 36 M 1803 62 P  
 JOHNSON, EDEN E, 2820 SE 29TH,66605  
 234-5481  
 39 F 74808 61 P  
 JOSEPH, BRIAN W, 130 CONT MED BLOG,66606  
 234-8653  
 38 M 35205 61 CHP  
 JOSS, CHARLES S, 221 MED ARTS BLDG W,66604  
 232-0444  
 14 M 1606 40 GS  
 JOYCE, G BERNARD, 200 CONTINENTAL MED BLDG,66606  
 233-7491  
 17 M 1902 44 ORS  
 KATZ, JEROME B, MENNINGER FD,66601  
 234-9566  
 22 M 2101 44 P  
 KAVEL, KARL K, MED PLAZA BLOG,66604  
 234-2663  
 36 M 3605 64 POA  
 KEARNS, NORBERT W, BCX 829,66601  
 234-9566  
 43 M 1002 70 P  
 KELLY, DAN A, 904 MULVANE,66606  
 232-8224  
 39 M 2803 64 PO  
 KENNEDY, HOWARD U, 1115 W TENTH SUITE A,66604  
 233-8268  
 18 M 401 44 IM  
 KEYS JR, ROBERT C, 303 MED ARTS BLOG,66604  
 235-3451  
 36 M 1902 62 ANES  
 KEYS SR, ROBERT C, 3034 LYOLA,66614  
 -  
 97 M 1902 27 OO  
 KIM, YONG W, CONT MED BLOG,66606  
 232-6964  
 28 M 58302 49 IM  
 KINDLING, PAUL H, 40 MED ARTS BLDG,66604  
 233-1710  
 30 M 3545 61 TS



KIRKEGAARD, RODGER S. 835 WESTERN,66606  
 233-6493  
 30 M 1803 S6 OPH  
 KLEINHOLZ JR, EMIL JOHN. 600 MADISON,66607  
 354-5284  
 39 M 3503 65 IM  
 KLEMMER, HERBERT, MENNINGER FD,66601  
 234-9566  
 11 M 4102 37 P  
 KOVARIK, ERNEST D. 900 WASHBURN,66606  
 357-5171  
 36 M 3005 64 OPH  
 KROLL, HARRY G. 200 CONTINENTAL MED BLDG,66606  
 233-7491  
 24 M 1602 50 ORS  
 LAWSON, DWIGHT, 108 MEADOW LANE,66606  
 -  
 06 M 2802 30 IM  
 LEE, SONG DOW, 303 MED ARTS BLDG,66604  
 235-3451  
 43 M 38505 68 ANES  
 LEE, SONG PING, 918 W 10TH,66604  
 233-9681  
 34 M 38502 61 OTO  
 LEGLER, GARY LEE, 2835 SE SKYVIEW CT,66605  
 233-8961  
 50 M 2878 77 GP  
 LEIFER, WILLIAM N. 1500 W TENTH,66606  
 354-6031  
 47 M 1902 78 PATH  
 LENTZ, WILLIAM R. 308 MED ARTS BLDG,66604  
 235-3443  
 24 M 1902 53 FP  
 LESSENDEN JR, C M. S635 NW BRICKYARD RD,66618  
 272-3111  
 18 M 1902 43 D  
 LEVY, EDWIN Z. 4125 SW GAGE CTR DR,66604  
 273-5610  
 29 M 1606 54 P  
 LIESMANN, JEAN ELIZABETH, MEMORIAL HOSP,66611  
 354-5275  
 49 F 1902 74 IM  
 LONG, JOHN W. 1001 HORNE ST,66604  
 233-1710  
 43 M 1902 70 TS  
 LUMB, RAYMOND C. 901 GARFIELD,66606  
 354-9591  
 42 M 1001 68 RHU  
 LYNCH, JOHN A. 300 CONT MED BLDG,66606  
 357-0301  
 30 M 2834 55 ORS  
 MARSHALL, B M. 1826 SW 34TH,66611  
 -  
 08 M 2802 34 U  
 MARTIN, WILLIAM O. 303 MED ARTS BLDG,66604  
 235-3451  
 19 M 1902 44 ANES  
 MAU, WALTER. 301 MEDICAL PLAZA BLDG,66604  
 233-4256  
 16 M 1611 40 U  
 MCCARTER, DUANE K. 2101 W 10TH,66604  
 233-8979  
 26 M 1902 58 IM  
 MCCLELLAN, JOHN W. 1710 W 10TH,66604  
 -  
 11 M 3006 36 OO  
 MCCLURE, JAMES A. 301 MED PLAZA BLDG,66604  
 233-4256  
 18 M 1902 44 U  
 MCELROY, ROBERT T. 221 MED ARTS BLDG,66604  
 232-0444  
 35 M 1902 61 GS  
 MCELROY, WILBUR J. 1616 W EIGHTH,66606  
 233-2280  
 35 M 1902 61 OPH  
 MECH, ARNDLD W. 3240 TIMBERLAKE LN,66614  
 234-9566  
 52 M 1643 77 P  
 MEGIBDW, ALAN D. 918 W 10TH,66604  
 233-9681  
 37 M 3503 64 CHP  
 MEHRHOF, EDWARD G. 2700 W SIXTH, 66606  
 296-5117  
 32 M 3515 62 FP  
 MEIDINGER, RICHARD. 310 MED ARTS BLDG,66604  
 234-3451  
 39 M 1902 65 DR  
 MENNINGER, KARL A. BDX 829,66601  
 -  
 93 M 2401 17 P  
 MENNINGER, ROBERT G. 3617 W 6TH ST,66601  
 234-9566  
 22 M 3545 52 P

MENNINGER, ROY W. 3617 W 6TH,66601  
 234-9566  
 26 M 3520 51 P  
 MENNINGER, W WALTER, THE MENNINGER FD,66601  
 234-9566  
 31 M 3520 57 P  
 MILLS JR, PHILIP E. 901 GARFIELD,66606  
 357-6171  
 36 M 1902 64 N  
 MITTLEMAN, FREDERICK S. MENNINGER FD,66601  
 234-9566  
 45 M 3006 70 P  
 MODLIN, HERBERT C. MENNINGER FD,66601  
 234-9566  
 13 M 3005 38 P  
 MORRIS, MERLE D. 1401 W 10TH,66604  
 234-2877  
 21 M 1902 45 OBG  
 MORRISON, MICHAEL R. 800 LINCOLN,66606  
 233-5101  
 50 M 1902 76 OBG  
 MORROW JR, J TARTON, MENNINGER FD,66601  
 234-9566  
 23 M 4804 47 CHP  
 MUELLER, ARNOLD V. 901 GARFIELD,66606  
 354-9591  
 31 M 3005 57 IM  
 MURPHY, THDMAS MEAD, PO BOX 829,66601  
 234-9566  
 41 M 3901 68 P  
 MYERS, JO ANN, MENNINGER FD,66601  
 234-9566  
 28 F 1902 53 P  
 NABOURS, RICHARD D. 4228 W 29TH ST TERR,66614  
 272-7190  
 27 M 1902 54 FP  
 NANCE, JDEL, MENNINGER FOUNDATION,66601  
 234-9566  
 42 M 3546 72 P  
 NICE, G WILLIAM, 112 MED ARTS BLDG EAST,66604  
 235-8090  
 22 M 1902 46 IM  
 NOVOTNY, PETER C. MENNINGER FD,66601  
 234-9566  
 30 M 15407 55 P  
 NYSTROM, CURTIS A. 2707 W 29TH,66614  
 272-8440  
 23 M 1902 54 FP  
 O'NEIL, ROBERT H. 901 GARFIELD,66606  
 354-9591  
 20 M 1902 45 IM  
 OBOURN, ROBERT L. 1150 OAKLEY,66604  
 234-9566  
 19 M 2802 50 P  
 PALMBERG, KENT E. 901 GARFIELD,66606  
 354-9591  
 49 M 1902 74 IM  
 PAPP, ROBERT, 3230 W 30TH,66614  
 272-5956  
 38 M 1611 63 FP  
 PARMAN, RDBERT D. 904 MULVANE,66606  
 232-8224  
 27 M 1902 54 PD  
 PARULKAR, DEEPAK S. 1001 HORNE #215,66604  
 232-8761  
 49 M 49517 73 ANES  
 PATEL, VINOD, 655 WESTCHESTER RD,66606  
 357-6171  
 47 M 49531 69 N  
 PATIND, EDGAR, MENNINGER FD,66601  
 234-9566  
 41 M 26406 66 P  
 PATRICK, FRED EDWARD, 904 MULVANE,66606  
 232-8224  
 45 M 1902 71 PD  
 PAYNE, RDBERT R. 200 CONTINENTAL MED BLDG,66606  
 233-7491  
 29 M 1902 55 ORS  
 PENN, GEORGE M. VETERANS MEDICAL CENTER,66622  
 272-3111  
 30 M 4802 58 P  
 PETERSON, DEAN L. 303 MED ARTS BLDG WEST,66604  
 235-3451  
 24 M 1902 54 ANES  
 PETERSDN, RCBERT L. STORMDNT-VAIL EMERGENCY,66606  
 354-6108  
 36 M 1902 62 FP  
 PETERSON, VERNON J. 310 MED ARTS BLDG,66604  
 234-3451  
 42 M 512 68 R  
 PETRIK, EDWIN L. MEMCRIAL HOSPITAL,66607  
 354-5100  
 35 M 1902 64 IM

PETTERSON, DENNIS CRAIG, 310 MEDICAL ARTS BLDG, 66604  
 234-3451  
 49 M 1902 74 R  
 PFUETZE, ROBERT E, 209 MED ARTS BLDG EAST, 66604  
 232-9257  
 09 M 1902 35 OBG  
 PIERCE, CHARLES F, 918 W 10TH, 66604  
 233-9681  
 24 M 4101 51 OBG  
 PIERCE, DONALD R, 307 MED ARTS BLDG EAST, 66604  
 235-2226  
 23 M 5101 49 FP  
 POLLY, RICHARD E, 631 HDRNE ST, 66606  
 357-0301  
 42 M 1803 68 DRS  
 PORTER, ROBERT D, 901 GARFIELD, 66606  
 354-9591  
 41 M 2802 67 IM  
 POWELL, WILLIAM R, 833 GARFIELD, 66606  
 233-8941  
 30 M 1902 54 GS  
 POWELL II, BENSON M, 400 CONTINENTAL MED BLDG, 66606  
 354-9504  
 26 M 1606 49 TS  
 PRESTON, RALPH R, 1710 WEST 10TH, 66604  
 234-2624  
 19 M 1902 44 DPH  
 PROKOP, BRADFORD S, 900 WASHBURN, 66604  
 233-3900  
 32 M 1606 57 OPH  
 PYLE, LUCIEN R, 211 MED ARTS BLDG EAST, 66604  
 233-1304  
 01 M 1601 28 OBG  
 RAINBOW-EARHART, KATHRYN A, 825 WESTERN, 66606  
 233-1730  
 21 F 4707 48 P  
 RAMSEY, BARTLETT W, 904 MULVANE, 66606  
 232-8224  
 25 M 1902 50 PD  
 RANSOELL, EDGAR C, 800 LINCOLN, 66606  
 233-5101  
 41 M 3005 66 OBG  
 RANSOM, JAMES H, 223 MEDICAL PLAZA BLDG, 66604  
 234-2663  
 36 M 1803 62 A  
 REINKING, VICTOR E, 918 WEST 10TH, 66604  
 233-9681  
 26 M 1902 51 IM  
 REYMOND, RALPH D, S-F CAP REG RADIOTHER CTR, 66606  
 234-3451  
 37 M 2301 67 R  
 RICCI, ROBERT LAWLER, 901 GARFIELD, 66606  
 354-9591  
 50 M 1902 75 IM  
 RICH, JOSEPH E, 634 MULVANE #101, 66606  
 233-1979  
 47 M 40734 74 OBG  
 RICHARDSON, J M, TOPEKA MEDICAL CENTER, 66604  
 233-9681  
 47 M 1611 74 IM  
 RIEDEL, ROBERT H, 6731 SW ALYESBURY RD, 66610  
 235-0011  
 04 M 2802 28 PH  
 ROBERTS, WARREN E, PO BOX 4047, 66601  
 272-5797  
 25 M 1902 57 FP  
 ROBINSON, DAVID B, 800 LINCOLN, 66606  
 233-5101  
 47 M 1902 73 OBG  
 ROCERETO, PAUL V, 1001 MULVANE, 66604  
 233-0401  
 47 M 1902 73 FP  
 ROEDER, ROBERT E, 901 GARFIELD, 66606  
 354-9591  
 40 M 1902 67 IM  
 ROSS, JACK L, MENNINGER FD, 66601  
 234-9566  
 32 M 4812 56 P  
 RORTER, LARRY, 301 MEDICAL PLAZA BLDG, 66604  
 233-4256  
 38 M 3007 66 U  
 RODY, WILLIAM R, 634 MULVANE, 66606  
 233-1979  
 26 M 1606 48 ADM  
 RUCKER, CLEMENS, 1205 W 29TH, 66611  
 -  
 86 M 2822 05 DD  
 RUNNELS, JOHN B, 901 GARFIELD, 66606  
 357-6171  
 35 M 1902 61 NS  
 RUPP, RICHARD J, 901 GARFIELD, 66606  
 354-9591  
 42 M 3841 68 CD

SANCHEZ, ROGELIO, 1516 W 6TH ST, 66606  
 232-1005  
 31 M 64901 64 U  
 SARGENT, JOSEPH O, MENNINGER FD, 66601  
 234-9566  
 32 M 2501 58 IM  
 SAYLOR, EDWARD H, 918 WEST 10TH, 66604  
 233-9681  
 39 M 1902 65 PO  
 SAYLOR, LESLIE L, 918 WEST 10TH, 66604  
 -  
 07 M 1606 35 OO  
 SAYLOR, MARK, 918 WEST 10TH, 66604  
 233-9681  
 37 M 1902 66 GS  
 SCAMMAN, W WIKE, PO BOX C-50, 66601  
 234-8621  
 32 M 4705 57 PATH  
 SCHLOESSER, HARVEY L, 918 MERCHANTS NATL BK, 66612  
 235-3184  
 21 M 3901 51 P  
 SCHLOESSER, PATRICIA T, 1914 WARNER CT, 66604  
 862-9360  
 24 F 3901 49 PD  
 SCHRAM, PETER CHARLES, 130 CONTINENTAL BLDG, 66606  
 234-8653  
 39 M 2507 69 P  
 SEGERSON, JOHN A, 901 GARFIELD, 66606  
 357-6171  
 18 M 3545 43 N  
 SEHDEV, JOAN, MEMORIAL HOSP, 66607  
 354-5100  
 40 F 6101 63 FP  
 SETTLE SR, RUSSELL O, 2320 CHELSEA DRIVE, 66614  
 -  
 04 M 1902 29 OD  
 SEVIER, SAMUEL M, 3107 W 21ST, 66604  
 296-5306  
 19 M 4812 44 IM  
 SHAW, JOSEPH L, MED ARTS BLDG #205, 66604  
 235-6221  
 34 M 511 60 ORS  
 SHEAFOR, DOUGLAS, 918 W 10TH, 66604  
 233-9681  
 34 M 1902 60 P  
 SHELTON, STEPHEN E, 918 W 10TH, 66604  
 233-9681  
 35 M 702 61 P  
 SHERWOOD JR, CLARENCE E, CONTINENTAL MED BLDG, 66606  
 354-9504  
 22 M 702 53 GS  
 SIMPSON, WILLIAM S, MENNINGER FOUNDATION, 66601  
 234-9566  
 24 M 6001 48 P  
 SISK, PHILLIP B, 310 MED ARTS BLDG WEST, 66604  
 234-3451  
 32 M 1803 56 R  
 SMITH, LEO A, 918 BUCHANAN, 66604  
 -  
 08 M 3006 33 DO  
 SNARR, JACK W, MED ARTS BLDG W #310, 66604  
 234-3451  
 41 M 6201 65 DR  
 SPEARMAN, JESSE L, MED ARTS BLDG ROOM 24, 66604  
 234-2879  
 20 M 1902 54 D8G  
 SPENCER, MILLARD C, 310 MED ARTS BUILDING, 66604  
 234-3451  
 28 M 1902 55 R  
 SPENCER, WAYNE E, 103 MED ARTS BLDG EAST, 66604  
 233-9686  
 38 M 1902 64 IM  
 STEIN, JOSEPH M, 901 GARFIELD, 66606  
 357-6171  
 24 M 3519 47 N  
 STODCK, KARL W, 1710 W 10TH, 66604  
 235-5205  
 13 M 2834 37 DPH  
 SUFI, ASHRAF M, 1001 HORNE #III, 66604  
 354-8518  
 43 M 70402 68 IM  
 SUFI, KAISER A, 7210 FOUNTAINDALE RD, 66614  
 478-9472  
 44 F 70402 68 PATH  
 SUTTON, RICHARD O, 1706 W TENTH, 66604  
 235-2311  
 38 M 4706 67 ORS  
 SWDGGER JR, GLENN, MENNINGER FD, 66601  
 234-9566  
 35 M 3806 60 P  
 TAPPEN, DANIEL L, 800 LINCOLN, 66606  
 233-5101  
 16 M 1902 41 OBG



TARGOWNIK, KARL K., 1218 W TENTH, 66604  
296-7281  
1S M 40710 49 P  
TARNOFF, GERALD M., BOX 829, 66601  
234-9566  
48 M 1642 73 P  
TARNOWER, WILLIAM, MENNINGER CLINIC, 66601  
234-9566  
21 M 4802 48 P  
TEMPERO, STEPHEN J., 310 MED ARTS BLDG, 66604  
234-3451  
42 M 1606 67 R  
THOMS, NORMAN W., 40 MED ARTS BLDG, 66604  
233-1710  
34 M 2501 59 TS  
THURSTON, DAVID E., 200 CONTINENTAL BLDG, 66606  
233-7491  
29 M 1902 55 ORS  
TIETZE, DENNIS D., 634 MULVANE, 66606  
—  
50 M 1902 78 FP  
TOTH, JOHN ROY, 631 HCRNE - SUITE 340, 66606  
232-9394  
49 M 1902 71 FP  
TOTH, NANCY L., 3032 CLARK CT, 66604  
232-9394  
48 F 1902 74 FP  
TOZER, RICHARD C., 901 GARFIELD, 66606  
—  
19 M 4102 4S OO  
TRAVIS, JOHN W., S-F CAP REG RADIOTHER CTR, 66606  
29S-8000  
29 M 1606 SS R  
TREES, CLYDE B., 3700 HUNTOON, 66604  
—  
09 M 2401 33 OO  
TREGER, NEWMAN V., 1704 W 10TH, 66604  
354-8761  
16 M 1902 40 IM  
UHR, NATHANIEL, MENNINGER FOUNDATION, 66601  
234-9566  
00 M 3519 21 IM  
VAN SICKLE, GREGGORY J., 634 MULVANE, 66606  
233-8508  
49 M 1606 75 PO  
VANDE GARDE, LARRY D., 800 LINCOLN, 66606  
233-S101  
41 M 1803 66 ORG  
VOGEL, STANLEY J., 901 GARFIELD, 66606  
354-9591  
44 M 2802 70 IM  
VOTH, HAROLD M., MENNINGER FOUNDATION, 66601  
234-9566  
22 M 1902 47 P  
WADE III DO, WILLIAM E., PC BOX 1531, 66601  
272-3111  
53 M 3979 80 P  
WALLACE, LEO F., SS00 W 24TH, 66614  
—  
17 M 1902 41 OO  
WALLS, WILLIAM J., 310 MED ARTS BLDG, 66604  
354-6171  
39 M 2834 66 OR  
WALZ, ROYCE C., 1710 W 10TH SUITE 20S, 66604  
234-2676  
27 M 15407 60 P  
WANLESS, KIRK M., 1424 W EIGHTH, 66606  
232-8188  
44 M 2803 74 OTO  
WARD, HOWARD N., 901 GARFIELD, 66606  
354-9591  
37 M 1606 62 HEM  
WARE, LUCILE M., MENNINGER FOUNDATION, 66601  
234-9566  
29 F 3501 S3 P  
WARRICK, DAVID ALAN, 918 W TENTH, 66604  
233-9681  
49 M 3843 76 IM  
WATERS, DALE A., 1001 HORNE #40, 66604  
233-1710  
41 M S60S 67 COS  
WEAVER, WALTER D., 900 WASHBURN ST, 66606  
233-3636  
41 M 1902 69 OPH  
WEBER, DARRELL J., 1710 W 10TH, 66604  
233-2305  
16 M 1902 44 FP  
WIGGLESWORTH, ANNE, 923 GARFIELD, 66606  
233-9681  
40 F 1902 75 ORG  
WIKSTEN, VERNON C., 807 TERRACE AVE, 66611  
—  
11 M 1902 37 OO

WILCOX, DONALD E., 6700 S TOPEKA AVE, 66620  
296-3782  
24 M 1902 55 PH  
WILOS, CHARLES E., 3227 MAC VICAR COURT, 66611  
—  
1S M 2834 42 P  
WILSON, MARVIN H., 1516 SW SIXTH, 66606  
234-0591  
38 M 1003 64 GS  
WINER, RICHARD S., S813 SW 22ND TERR #4, 66614  
234-9566  
SS M 1902 80 P  
WING, NANCY J., 700 HARRISON, 66603  
29S-317S  
30 F 5104 56 ADM  
WONG, NORMUNO, MENNINGER FD, 66601  
234-9566  
34 M S02 S9 P  
WOOD, EDWARD RUSSELL, 901 GARFIELD, 66606  
354-9591  
49 M 1902 71 IM  
WOODS, ROBERT P., 901 GARFIELD, 66606  
357-6171  
14 M 6701 40 N  
YORKE JR, CRAIG H., 901 GARFIELD, 66606  
357-6171  
48 M 2401 74 NS  
YOUNG, PAUL E., TOPEKA MEDICAL CENTER, 66604  
233-9681  
42 M 2407 75 OPH  
YOUNG, THEODORE E., 107 MED ARTS BLDG WEST, 66604  
232-0576  
22 M 2307 46 PO  
ZACHARIAS, DAVID LLOYD, 1500 W TENTH, 66606  
354-6870  
26 M 1902 S3 PATH  
ZIMMERMAN, WILLIAM H., CONTINENTAL BLDG, 66606  
232-4377  
20 M 3006 S2 GS

**TRIBUNE—316**  
(Southwest Kansas Society)

WERNER, WILLARD F., 67879  
376-42S1  
24 M 1902 S2 FP

**TROY—913**  
(Northeast Kansas Society)

MASTERSON, MELVIN LERCY, 210 S MAIN, 66087  
98S-2211  
23 M 4901 48 R

**ULYSSES—316**  
(Southwest Kansas Society)

BREWER, MARSHALL A., PC BOX 687, 67880  
356-1261  
19 M 1902 46 FP  
GREENWOOD, JAMES F., PC BOX 927, 67880  
356-1261  
33 M 1611 65 FP  
TILLOTSON, DON R., 223 N MAIN, 67880  
356-1261  
32 M 1902 6S FP

**VALLEY CENTER—316**  
(Sedgwick County Society)

WILSON, ROBERT L., RR 1, 67147  
68S-2S63  
30 M 1902 S7 EM

**WAKEENEY—913**  
(Central Kansas Society)

BERNER, NEAL E., 323 RUSSELL, 67672  
743-2124  
44 M 1902 72 FP  
HAMILTON, JAMES J., MEDICAL CENTER, 67672  
743-2124  
30 M 1902 SS FP

**WAMEGO—913**  
(Pottawatomie County Society)

BORGENDALE, LLEWELLYN V. 1601 SUNSET.66547  
456-2291  
29 M 1902 60 FP  
BRADEN, BILL L. 507 ELM.66547  
456-2291  
31 M 1902 60 FP  
CLARK, LAURENCE A. 507 ELM.66547  
456-2291  
12 M 1902 42 FP

**WASHINGTON—913**  
(Northeast Kansas Society)

BITZER, DONALD A. 115 W 3RD.66968  
—  
03 M 3005 26 00  
HODGSON, DAVID K. 107 E THIRD.66945  
325-2259  
49 M 1902 78 FP

**WATHENA—913**  
(Northeast Kansas Society)

PETERSEN JR, EVAN A. 324 ST JOSEPH ST.66090  
989-3122  
24 M 1803 55 FP

**WELLINGTON—316**  
(Tri-County Society)

ANDERSON, LARRY R. 1323 NORTH A.67152  
326-3301  
43 M 1902 73 FP  
CDLE, WARD M. 110 N JEFFERSON.67152  
326-7221  
08 M 1902 36 FP  
DIACON, JAMES L. 1619 N KEYES.67152  
326-2111  
24 M 3901 52 FP  
NALDOZA JR, FAUSTINO M. 1323 NORTH A.67152  
326-8171  
M 74801 64 GS  
PEDRAZA, HERNANDO. 33 CRESTWAY.67152  
326-8070  
28 M 26404 56 R  
WEIGAND, JOEL T. 1323 NDRTH A.67152  
326-3301  
43 M 1902 70 FP

**WESTMORELAND—913**  
(Pottawatomie County Society)

DECHAIRD, THOMAS. DECHAIRD HOSP.66549  
457-3311  
13 M 1902 36 FP

**WICHITA—316**  
(Sedgwick County Society)

ABBAS, DILAWER H. 841 S HILLSIDE.67211  
685-1111  
45 M 70402 71 N  
ACEVEDO, ALFREDO. 959 N EMPORIA SUITE 205.67214  
265-4701  
40 M 73701 59 COTS  
ADAMS, AUSTIN J. 1056 KEVIN.67208  
—  
10 M 4804 36 00  
AGUSTIN, CONRADO M. 1035 N EMPORIA STE 165.67214  
267-3389  
38 M 74807 62 OBG  
AHLSTRAND, RICHARD A. 3333 E CENTRAL STE 214.67208  
685-1291  
41 M 3005 67 R  
ALEXANDER, ELIZABETH. 855 N HILLSIDE.67214  
685-1381  
46 F 1902 77 FP  
ALFONSO, MANUEL. 3244 E DOUGLAS.67208  
689-9445  
37 M 84710 66 ANES  
ALLEN, PHILLIP M. 550 N HILLSIDE. 67214  
688-2838  
27 M 2401 81 PATH

ALMONTE, PRISCILLA C. 303 S HILLSIDE.67207  
684-7251  
44 F 74801 67 ANES  
ALMONTE, RODOLFO D. 1431 BLUFFVIEW DR STE 217.67207  
686-3791  
39 M 74801 64 OBG  
ANDERSON, DONALD S. 3333 E CENTRAL.67208  
685-4389  
42 M 1902 69 ANES  
ANDERSON, EUGENE G. SUTTCN PLACE.67202  
265-8619  
19 M 1902 44 OBG  
ARGOSINO, RODOLFO. 1148 S HILLSIDE.67211  
683-6506  
40 M 74801 63 GS  
ARTZ, TYRONE D. 1125 N TOPEKA.67214  
267-0362  
41 M 1803 67 ORS  
ASHMORE, ARTHUR L. 5025 E KELLOGG.67218  
—  
05 M 1902 32 TS  
AUNINS, JOHN. 4853 HEMLOCK.67216  
524-6805  
28 M 4706 56 FP  
BAILEY, DONALD C. 3243 E MURDOCK.67208  
685-1491  
37 M 3901 65 ORS  
BARBA, ESTRELLA G. 1035 N EMPORIA SUITE 280.67214  
264-2301  
41 F 74802 66 P  
BARBA JR MD, ANTONIO P. 1035 N EMPORIA SUITE 280.67214  
264-2301  
34 M 74807 62 OBG  
BARKER, BENJAMIN W. 1148 S HILLSIDE.67211  
683-4647  
18 M 1902 51 FP  
BARNETT, ARNOLD M. 5111 E 21ST.67208  
685-2561  
32 M 83601 54 N  
BARTAL, ELY. 925 N EMPORIA SUITE F.67214  
262-7598  
45 M 39607 70 ORS  
BARTLETT, WAYNE C. 13 HAMPTON RD.67207  
689-9124  
07 M 1601 31 GS  
BASS II, ORAL E. 851 N HILLSIDE.67214  
685-1371  
40 M 2803 71 U  
BATES, MICHAEL D. 2703 EAST CENTRAL.67214  
685-1277  
48 M 3005 74 OBG  
BATTISTE, CYNTHIA ELAINE. 3333 E CENTRAL SUITE 533.67208  
681-2021  
47 F 1606 73 PD  
BAUMAN, M LEON. 1629 UNIVERSITY.67213  
—  
01 M 1902 44 00  
BAUMANN, PAUL A. 3333 E CENTRAL.67208  
685-1291  
32 M 5605 57 R  
BEAVER, JAMES L. 245 COURTLIGH DR.67218  
263-3262  
09 M 2101 35 00  
BEBAK, DONALD M. 2322 E CENTRAL.67214  
263-6186  
32 M 3508 58 ANES  
BECKER, KARL E. 275 S PERSHING.67208  
686-3963  
43 M 2307 69 ANES  
BENZ, LAURIE J. VETERANS HOSP.67218  
685-2221  
39 F 4101 65 1M  
BETHEL, CHANDLER S. 5107 E 21ST ST.67208  
682-6559  
34 M 1902 59 1M  
BHARGAVA, BAIKUNTH N. 3243 E MURDOCK SUITE 102.67208  
682-4523  
37 M 49530 63 U  
BIERMANN, HENRY J. 425 E MURDOCK.67214  
265-6287  
27 M 3006 52 GS  
BIERMANN, WILLIAM J. 1435 LIEUNETT.67203  
—  
04 M 3006 29 00  
BINGAMAN, ROBERT W. 7111 E 21ST.67206  
684-2851  
47 M 3901 72 GS  
BINYON, KERNIE W. 4618 E CENTRAL.67208  
684-2819  
24 M 1902 56 FP  
BLAYLOCK, HOYT C. 835 N HILLSIDE.67214  
685-4395  
21 M 1902 45 D



BLOOM, MARY J, 647 N HILLSIDE, 67214  
682-4559  
13 F 1902 49 PO  
BLOOM, ROONEY LAMONT, 2141 LORI LANE, 67207  
-  
54 M 1902 79 IM  
BLOXHAM, THOMAS J, 3244 E DOUGLAS, 67208  
689-9215  
50 M 1803 75 PUO  
BOND, ROGER C, 3243 E MURDOCK, 67208  
684-0251  
40 M 5606 67 CO  
BOYO, Z REX, 120 S MAIZE RD #12, 67209  
268-5000  
26 M 3005 52 FP  
BOYLE, HUGH H, 424 N WOODLAWN, 67208  
686-2193  
33 M 3806 60 PATH  
BRAKE, DAVID, 3333 E CENTRAL, 67208  
685-1291  
43 M 702 68 R  
BRAUN, KENNETH, 1431 S BLUFFVIEW, 67218  
683-4688  
47 M 3519 72 OPH  
BRAUN, THOMAS G, 3243 E MURDOCK #601, 67208  
685-2377  
35 M 6001 61 N  
BRAUN III, WILLIAM T, 3333 E CENTRAL, 67208  
685-1291  
37 M 2802 61 R  
BRECKBILL, DAVID L, 3333 EAST CENTRAL #214, 67208  
685-1291  
38 M 1902 64 R  
BRINTON, E HOLMES, 3244 E DOUGLAS, 67208  
689-9124  
46 M 2101 70 GS  
BRINTON, EDWARD S, 329 NCRTH TERRACE DR, 67208  
-  
15 M 1611 41 OO  
BRITO, RAUL E, 3243 E MURDOCK, 67208  
682-4523  
32 M 31901 59 U  
BROSIOUS, FRANK C, 3243 E MURDOCK, 67208  
684-0251  
25 M 1902 49 IM  
BROWN, DAVID J, 425 EAST MURDOCK, 67214  
265-6287  
45 M 1902 71 GS  
BROWN, MICHAEL P, 3333 E CENTRAL, STE 308, 67208  
685-0559  
51 M 4802 78 OBG  
BROWN, ROBERT L, 5025 E KELLOGG, 67218  
682-1534  
21 M 1902 49 FP  
BROWN, RONALD C, 3243 E MURDOCK, 67208  
685-8231  
47 M 2803 73 FP  
BROWN, RONALD L, 303 S HILLSIDE, 67211  
684-7251  
45 M 3901 71 ANES  
BROWN, VAL J, 1802 N HYDRAULIC, 67214  
265-1461  
24 M 1003 47 FP  
BROWNING, WILLIAM H, 851 N HILLSIDE, 67214  
685-1371  
16 M 1902 43 U  
BRUNER JR, KENNETH W, ST FRANCIS HOSPITAL, 67214  
268-5414  
44 M 2401 70 PATH  
BUBECK, RALPH W, 3244 E DOUGLAS, 67208  
689-9396  
36 M 1803 62 IM  
BUCK JR, BEN H, 1152 S CLIFTON, 67218  
684-2081  
17 M 2834 43 TS  
BUCKRIDAN, LATIF, 7232 CHELSEA, 67206  
684-7251  
31 M 6501 62 ANES  
BURNEY, WILLIAM W, 1755 N MADISON, 67214  
264-8311  
17 M 1902 52 FP  
BURNEY II, WILLIAM W, 1755 N MADISON, 67214  
264-8311  
50 M 4707 76 IM  
BURPEE, JAMES F, 851 N HILLSIDE, 67214  
685-1371  
39 M 5605 66 U  
BUTH, DENNIS K, 2916 EAST CENTRAL, 67214  
684-5243  
45 M 1902 72 IM  
BUTIN, J WALKER, 3244 E DOUGLAS, 67208  
689-9477  
23 M 1902 47 IM

BUTLER, OORIS C, 1148 S HILLSIDE, 67211  
684-2329  
48 F 1902 75 FP  
BYRNE, JAMES PERRY, 905 N EMPORIA, 67214  
263-0296  
42 M 2101 68 TS  
CALIENOO JR, DANIEL J, WESLEY MED CENTER, 67214  
685-2563  
41 M 1902 67 EM  
CAPPER, STANLEY L, 3244 E DOUGLAS, 67208  
689-9206  
37 M 1803 67 D  
CARLSON, TERRY S, 550 N HILLSIDE, 67214  
688-2820  
50 M 3006 77 PATH  
CARREAU, ERNEST P, 5105 E 21ST, 67208  
-  
17 M 1902 44 OO  
CARTER, MACK A, 3333 E CENTRAL, 67208  
684-5158  
18 M 1902 50 OPH  
CASEY, JOHN J, 3243 E MURDOCK, 67208  
685-2377  
25 M 2604 49 NS  
CAUBLE, WILBUR G, 1148 S HILLSIDE, 67211  
683-1681  
12 M 2834 39 GS  
CAWLEY, LEO P, WESLEY MED CENTER, 67214  
685-2151  
22 M 3901 52 PATH  
CHANG, FREDERIC C, 905 N EMPORIA, 67214  
263-0296  
35 M 2401 59 GS  
CHAPMAN, JAMES H, POST OFFICE BOX 11344, 67211  
265-1684  
27 M 4706 63 R  
CHARO, FREDERICK H, 3244 E DOUGLAS, 67208  
689-9129  
15 M 5605 39 D  
CHO, SECHIN, UKSM - WICHITA, 67214  
268-8302  
47 M 58302 71 PO  
CHOPRA, RAMAN, 3333 E CENTRAL #201, 67208  
685-5271  
52 M 49536 76 PO  
CHRISTMAN JR, CARL, 3333 E CENTRAL STE 303, 67208  
685-0559  
48 M 4802 74 OBG  
CIFUENTES, RAUL F, UKSM - WICHITA, 67214  
688-2295  
40 M 23101 65 PEO  
CLARK, COURTNEY, 303 S HILLSIDE, 67211  
684-7251  
30 M 1902 56 ANES  
CLEAVER, EOGAR M, 1900 E NINTH, 67214  
268-8391  
26 M 3005 54 PH  
CLIFTON, H DAVID, 3600 E HARRY, 67218  
685-1111  
41 M 401 65 R  
CLINE, BYRON W, 3333 E CENTRAL, STE 303, 67208  
685-0559  
51 M 4802 78 OBG  
COHEN, JUSTIN THOMAS, 3333 E CENTRAL STE 1, 67208  
684-5158  
47 M 2803 74 OPH  
COHLMIA, JERRY B, 1035 N EMPORIA, 67214  
263-5891  
43 M 1902 70 IM  
COLEMAN, THOMAS J, 959 N EMPORIA, 67214  
265-0749  
18 M 3545 51 IM  
COLLIER, HAROLD W, 144 N OLIVER SUITE 100-A, 67208  
683-5008  
45 M 1902 71 ANES  
CONCEPCION JR, EUGENIC S, 1152 SOUTH CLIFTON, 67218  
681-2401  
39 M 74802 64 CO  
CONRADY, PETER A, 967 BACK BAY BLVD, 67203  
686-7327  
42 M 502 69 ANES  
COOK, DONALD RAY, 315 N HILLSIDE, 67214  
686-3391  
42 M 2012 71 FP  
COOK, G EDWARD, ST JCSEPH HOSPITAL, 67218  
685-1111  
42 M 401 67 R  
COSSMAN, F PRICE, 851 N HILLSIDE, 67214  
685-1371  
28 M 1902 57 U  
COWLES, GORDON T, 3333 E CENTRAL, 67208  
683-2661  
32 M 1902 58 OBG

CRANE, DAVID D, 929 N ST FRANCIS, 67214  
262-6211  
34 M 2501 60 PATH  
CRDNIN, DONALD J, 3244 E DDOUGLAS, 67208  
689-9227  
16 M 2604 40 ENT  
CRDW, ERNEST W, 3243 E MURDOCK, 67208  
684-0252  
20 M 1902 44 CD  
CRDWLEY, EDWARD X, 345 N HILLSIDE, 67214  
682-4519  
14 M 1643 39 GYN  
CUMMINGS, RICHARD J, 427 N HILLSIDE, 67214  
686-6608  
32 M 1902 57 DTD  
DAKHIL, SHAKER R, 1035 N EMPORIA SUITE 210, 67214  
262-4467  
50 M 60501 75 IM  
DANIELS, ROBERT M, 929 N ST FRANCIS, 67214  
262-6211  
24 M 1902 54 FP  
DAVIDSDN, HARRY T, 556 N 8RDADVIEW, 67208  
-  
87 M 3802 11 DD  
DAVIS, PAUL H, 7111 E 21ST, 67206  
684-2851  
47 M 3901 72 FP  
DAVIS, DONALD B, 1148 S HILLSIDE, 67211  
685-2152  
46 M 1902 72 FP  
DAY, HOWARD, 1035 N EMPORIA -SUITE 23S, 67214  
263-5891  
48 M 1902 74 NEP  
DE BAKKER, JAN B, 1035 N EMPORIA, 67214  
263-4903  
25 M 5104 59 GS  
DEJONG, DAVID C, 550 WEST SHORE DR, 67209  
268-5424  
33 M 2501 59 PATH  
DEMDS5, ELEANOR P, 3333 E CENTRAL SUITE 407, 67208  
682-5591  
42 F 74802 66 PD  
DEPDE, JOSEPH H, 8608 ENT DR, 67210  
221-4980  
31 M 1902 57 FP  
DDLAN JR, PHILIP JARVIS, 3244 E DDOUGLAS, 67208  
689-9477  
47 M 2101 73 GE  
DDNATELLE, EDWARD P, UKSM WICHITA, 67214  
268-8221  
22 M 2604 50 FP  
DONLEY, JAMES L, 3101 E NINTH, 67208  
684-0208  
46 M 1902 72 P  
DDNNELL, JAMES M, 3306 E CENTRAL, 67208  
682-6121  
28 M 1902 55 FP  
DDDRNBDS, J FRED, 929 N ST FRANCIS, 67214  
262-6211  
28 M 1902 57 R  
DDWNING, GREGORY, 1123 NDRTH DLIVER, 67208  
685-8499  
M 1902  
DRAKE, RALPH L, 4422 E 3RD, 67208  
-  
99 M 4102 26 DD  
DRAZEK, GEDRGE, 3244 E DDOUGLAS, 67208  
689-9111  
50 M 3506 76 DPH  
DREVETS, CURTIS C, 3244 E DOUGLAS, 67208  
689-9178  
30 M 1902 56 IM  
DUICK, GREGORY, 1035 NDRTH EMPORIA #130, 67214  
263-3271  
46 M 1643 72 CD  
DURAND, ANTONID C, 959 N EMPORIA, 67214  
263-7893  
29 M 74807 56 U  
DWDRZACK, DAVID L, 1001 N MINNEAPOLIS, 67214  
268-8378  
48 M 1902 73 IM  
DYCK, CDRA E, 702 WAVERLY, 67218  
-  
00 F 1902 26 DD  
DYER, VERNDN E, 3244 EAST DOUGLAS, 67208  
262-6202  
36 M 301 72 DBG  
ECKERT, WILLIAM G, ST FRANCIS LAB, 67214  
262-6211  
26 M 3519 52 PATH

EDWARDS, MANIS C, 3333 E CENTRAL, 67208  
683-2661  
33 M 3005 58 DBG  
EGELHOF, RICHARD H, 925 NDRTH EMPORIA, 67214  
263-1299  
45 M 1902 73 FP  
ELLIS, HARVEY D, 6611 E CENTRAL, 67206  
683-1022  
24 M 1902 55 GS  
ELNEN, WALTER T, 460 N TERR DR, 67208  
682-5671  
03 M 1643 32 GS  
EMERY, FRANK A, 10 ST JAMES PLACE, 67206  
-  
05 M 2802 29 DD  
ENDCH, ROLLAND, 5111 E 21ST, 67208  
681-0423  
49 M 64914 76 FP  
EPLER, JOHN P, ST JOSEPH MED CENTER, 67218  
685-1111  
53 M  
ERKEN, RONALD V, WICHITA PSYCHIATRIC CTR, 67208  
684-0201  
29 M 2834 56 P  
EVANS, FARRIS O, 521 RUTLAND RD, 67206  
-  
05 M 1902 32 FP  
EVANS, GRANT E, 4618 E CENTRAL, 67208  
682-6556  
21 M 4901 46 FP  
EVANS, ROGER WILLIAM, 925 N EMPORIA SUITE A, 67214  
263-5889  
39 M 1902 64 CD  
EYSTER, ROBERT L, 3243 E MURDOCK, 67208  
685-1491  
47 M 3901 73 DR5  
FARHA, GEDRGE J, 905 N EMPORIA, 67214  
263-0296  
27 M 2101 57 GS  
FARHA, S JIM, 905 N EMPORIA, 67214  
263-0296  
31 M 1001 57 TS  
FENDER JR, THOMAS H, 9400 E LINCOLN APT 113, 67207  
267-8439  
25 M 4812 54 DS  
FERRELL, DONALD P, ST JOSEPH MEDICAL CTR, 67218  
685-2371  
36 M 3901 63 EM  
FERRIS, BRUCE G, 825 N EMPORIA, 67214  
262-3495  
43 M 1902 69 PS  
FEUILLE JR, EDMOND G, 345 N HILLSIDE, 67214  
682-4572  
50 M 4802 75 DBG  
FIELDS, STEPHEN A, 7200 W 13TH, 67230  
722-4258  
42 M 2878 72 FP  
FINLEY, DENNIS R, 1035 N EMPORIA, 67214  
262-7429  
36 M 1606 62 DR5  
FISHER, JAMES B, 141 S OLD MANOR, 67218  
-  
09 M 1902 36 DD  
FISHER, RAY F, 3243 E MURDOCK SUITE 500, 67218  
684-0251  
49 M 1902 74 IM  
FITZGERALD, EDWARD J, 3600 E HARRY, 67218  
685-1111  
22 M 3006 50 R  
FITZIG, SANFORD, 3244 E DDOUGLAS, 67208  
689-9344  
46 M 4102 72 U  
FLEMING, FORNEY W, 3243 E MURDOCK #200, 67208  
685-1491  
43 M 4802 69 DR5  
FLDWERS JR, CLELL B, 855 N HILLSIDE, 67214  
685-1381  
22 M 1902 55 FP  
FDRD, CHARLES R, 232 S MAIZE RD, 67209  
942-4279  
38 M 1902 63 DPH  
FDWLER, ROBERT J, 3244 E DDOUGLAS, 67208  
689-9236  
37 M 2802 63 IM  
FRANCIS, NDRTDN L, 55 VIA RDMA, 67230  
-  
10 M 3005 35 ENT  
FRANCISCO, DAN A, 3243 MURDOCK SUITE 500, 67208  
684-0251  
40 M 1803 75 CD  
FRITZ, GEDRGE E, WESLEY MED CENTER, 67214  
685-2151  
18 M 2507 43 PATH



FRITZEMEIER, WILLIAM H, 835 N HILLSIDE, 67214  
685-4395  
14 M 1902 41 D  
FRDMER, JOEL, 611 N HILLSIDE, 67214  
684-0501  
46 M 16501 75 A  
FROMM, ARTHUR H, 315 N HILLSIDE, 67214  
685-2281  
37 M 1902 63 FP  
FULTON, JOHN K, 3333 E CENTRAL SUITE 801, 67208  
686-0732  
18 M 5605 43 PUD  
GALICHIA, JOSEPH P, PC 80X 594, 67201  
263-3271  
42 M 1902 69 CO  
GALVAN, ALONSO, 3243 E MURDOCK, 67208  
684-0251  
38 M 64906 64 IM  
GENILD, AMANCIO C, 120 LONGFORD CT, 67206  
685-2371  
37 M 74801 61 EM  
GENILD, CELESTE A, 3244 EAST DOUGLAS, 67208  
689-9445  
39 F 74801 62 ANES  
GEORGE, EARL F, 5107 E 21ST, 67208  
265-6991  
35 M 1902 65 FP  
GEORGE, M DON, WICHITA PSYCHIATRIC CL, 67208  
268-8388  
31 M 1001 56 P  
GERBER, ALLEN O, 7111 E 21ST, 67206  
684-2851  
48 M 1902 71 GS  
GERBER, LOWELL IAN, WICHITA CLINIC, 67208  
689-9111  
49 M 1643 74 CD  
GESSLER, DONALD J, 1122 N TOPEKA, 67214  
265-2876  
41 M 1902 67 FP  
GILMARTIN, RICHARD C, 3243 E MURDOCK #601, 67208  
685-2377  
32 M 4101 58 PDN  
GIVNER, DAVID, 611 N HILLSIDE, 67214  
684-0501  
03 M 2301 29 IM  
GOERING, ROBERT C, 3600 E HARRY, 67218  
685-1111  
25 M 64901 56 PATH  
GOHIL, MAHENDRA N, 1823 RUTLAND, 67206  
265-1684  
28 M 40930 66 DR  
GOLOBERG, HERBERT R, 400 WOODLAWN SUITE 101, 67208  
685-4215  
33 M 3508 59 PO  
GONZALEZ, FRANCISCO, 1035 NORTH EMPORIA #265, 67214  
265-3226  
46 M 73706 70 IM  
GONZALEZ, HIRAM, 1035 N EMPORIA, 67214  
262-1853  
20 M 64901 52 P  
GOOPASTURE, HEWITT C, 1035 N EMPORIA SUITE 105, 67214  
262-6211  
43 M 1902 69 IM  
GOULDNER, RENE M, 139 COURTLIGH DR, 67218  
-  
88 M 3501 18 OD  
GOYLE, KRISHAN K, 1144 N ST FRANCIS, 67214  
267-0159  
34 M 49529 63 CD  
GOYLE, VIMAL, 1144 N ST FRANCIS, 67214  
267-9906  
41 F 49529 65 OBG  
GRAUEL, CHARLES W, 8310 CHALET, 67207  
262-1127  
44 M 1902 70 ANES  
GRAVES, JACK W, 3244 E DOUGLAS, 67208  
-  
17 M 1902 42 OD  
GRAY, C LUCIEN, 4821 E CENTRAL, 67208  
684-5171  
21 M 1902 45 ENT  
GRAY, H TDM, 3244 E DOUGLAS, 67208  
689-9152  
19 M 401 44 D  
GREER, JAMES A, 3244 EAST DOUGLAS, 67208  
689-9227  
43 M 1611 69 OTO  
GRIBBLE, ROBERT N, 1035 N EMPORIA #285, 67214  
264-2401  
43 M 1902 69 R  
GRILLDT, FLYD B, 814 S WOODLAWN, 67218  
684-0243  
18 M 1902 51 FP  
GRDHS, HEINZ K, 550 NORTH HILLSIDE, 67214  
685-2151  
42 M 15407 66 PATH  
GRUNO, FRANK M, 3244 EAST DOUGLAS, 67208  
689-9420  
47 M 1803 72 IM  
GRUSHNYS, ARNOLD, 3244 E DOUGLAS, 67208  
689-9445  
19 M 40721 59 ANES  
GSELL, GEORGE F, 3244 E DOUGLAS, 67208  
-  
07 M 1601 33 OD  
GUTHRIE, RICHARD A, 1001 N MINNEAPOLIS, 67214  
268-8228  
35 M 2803 60 PO  
HABASHY, SHAWKY N F, 1122 N TOPEKA, 67214  
268-5996  
43 M 33004 65 OBG  
HAGAN, C THOMAS, 959 N EMPORIA, 67214  
265-0789  
16 M 3006 42 IM  
HAGAN, FRANCIS J, PO BOX 1837, 67201  
262-1057  
13 M 3006 39 FP  
HALE, RALPH, 847 S HILLSIDE, 67211  
684-0295  
18 M 1902 46 A  
HALL, J RDGER, 3333 E CENTRAL, 67208  
685-5227  
42 M 4802 68 DPH  
HALPIN, EDWARD D, 1148 S HILLSIDE, 67211  
685-9229  
33 M 1902 62 DBG  
HARMS, EDWIN M, 5623 POLD DR, 67208  
-  
06 M 3901 34 OD  
HARRIS, FRANK H, 1035 N EMPORIA, 67214  
262-1853  
09 M 1001 39 NP  
HARRISON, A BROOKS, 1040 STRATFORD, 67206  
-  
99 M 1902 25 OD  
HARRISON, PAUL BARRY, 3243 EAST MURDOCK, 67208  
685-6222  
49 M 1902 74 GS  
HART, OILLIS L, 1152 S CLIFTON, 67218  
684-2081  
36 M 3901 64 GS  
HARTLEY, JAMES M, UK5M - WICHITA, 67214  
685-2387  
45 M 2604 71 FP  
HARVEY, ROSEMARY B, 2004 WELLINGTON PL, 67203  
265-5674  
24 F 1902 49 ADM  
HASSAN, RIZWAN U, 841 S HILLSIDE, 67211  
686-2831  
47 M 70305 70 N  
HATTRUP, RICHARD J, 610 N TYLER RD, 67212  
681-3016  
31 M 3006 57 FP  
HAWLEY, RAYMOND G, 5T JOSEPH HO5P, 67218  
685-1111  
39 M 1902 65 PATH  
HAYES, KRIS A, 649 N DELLROSE, 67208  
257-5971  
-  
HAYES, WILLIAM L, 3243 E MURDOCK, 67208  
684-0251  
28 M 1902 53 CO  
HAYS, THOMAS H, 7111 E 21ST, 67206  
684-2851  
49 M 1902 75 FP  
HENNING, CHARLES E, 320 N HILLSIDE, 67214  
682-3221  
37 M 1902 63 OR5  
HENSLEY JR, CLINE D, 3244 E DOUGLAS, 67208  
689-9272  
20 M 1902 44 OR5  
HERED, JOHN, 959 N EMPORIA, 67214  
262-3613  
41 M 2802 67 N  
HERSHBERGER DO, GRDVER, 7200 W 13TH S #3, 67203  
721-1200  
47 M 2878 79 GP  
HERSHORN, SIMON E, 3333 E CENTRAL, 67208  
685-1291  
22 M 1902 46 R  
HIEBERT, ABRAHAM E, 1530 W 13, 67203  
-  
94 M 2802 25 OD  
HINSHAW, ALFREDO H, 6110 ONEIDA, 67208  
-  
07 M 1902 33 OD

HINSHAW, CHARLES T, 256 N BLECKLEY DR,67208

-  
99 M 4705 26 00  
HIRATZKA, TOMIHARU, 6 ST CLOUD PLACE,67230

-  
13 M 511 43 00  
HIZON, RAMON R, ST FRANCIS HOSP,67214

262-6211  
38 M 74801 62 OR  
HODGSON, ROBERT B, 841 NORTH BROADWAY,67214  
263-6131  
22 M 1902 47 FP

HODDSON, HERVEY R, 1122 S CLIFTON,67218  
-

03 M 1606 31 00  
HOLDEN, DAVID M, 3243 E MURDOCK SUITE 300,67208  
688-3070

38 M 801 63 FP  
HOLDEN JR, RAYMOND F, 262 SOUTH BROOKSIDE,67218  
-

10 M 2802 33 00  
HOLLADAY, HARMON M, 327 N RUTAN,67208  
681-0431

23 M 1902 52 ANES  
HOLMES, JED, ST JOSEPH MED CTR - FP,67218  
685-1111

M  
HORBELT, DOUGLAS V, 3333 E CENTRAL,67208  
682-6511

47 M 4802 72 OBG  
HOUSHOLDER, DANIEL FAIR, 7705 KILLARNEY CT,67206  
268-5910

43 M 1902 70 NM  
HOUSHOLDER, MARTHA S, 835 NORTH HILLSIDE,67214  
685-4395

46 F 1902 72 O  
HOWARD, DONALD O, 959 N EMPORIA,67214  
265-7241

11 M 1902 38 OPH  
HUEBERT, DEAN A, 5025 E KELLOGG,67218  
682-1534

22 M 1902 46 FP  
HULL, KENNETH L, 1035 N EMPORIA,67214  
265-7903

38 M 2301 69 P  
HULTGREN, MYRON K, 855 N HILLSIDE,67214  
685-1381

41 M 1902 68 FP  
HUME, JOSEPH W, 3243 E MURDOCK,67208  
685-2223

38 M 1902 69 OBG  
HUMMER, LLOYD M, 3244 E DOUGLAS,67208  
689-9323

32 M 3901 57 1M  
HUND, LARRY R, 3333 E CENTRAL,67208  
363-8459

52 M 1902 78 PO  
HUSTEAD, ROBERT F, 427 N HILLSIDE, 67214  
683-7200

28 M 801 54 ANES  
HYNES, HARRY E, 1035 N EMPORIA,67214  
262-4467

35 M 53902 58 HEM  
IBARRA, J LUIS, 1035 N EMPORIA,67214  
262-1853

20 M 64901 46 P  
IDBEIS, BAOR, 1144 N ST FRANCIS,67214  
267-0159

47 M 87501 72 TS  
IDANNDU, NICHOLAS, 1111 N ST FRANCIS,67214  
265-2613

48 M 41801 72 TS  
JACKSON, CHARLES R, 1035 N EMPORIA,67214  
263-0812

27 M 1606 53 GS  
JAMES, DONALD L, 1301 N WEST,67203  
945-5245

42 M 3901 71 DTO  
JAMES, VERNON L, 3333 E CENTRAL SUITE 816,67208  
685-5326

29 M 3601 55 PD  
JAZAYERLI, NABIL, 1152 S CLIFTON,67218  
681-2401

44 M 87501 70 CO  
JEHAN, SAYED S, MENTAL HEALTH CLINIC,67214  
268-8251

33 M 70403 59 P  
JENNEY, CHARLES B, 905 N EMPORIA,67214  
263-0296

34 M 2834 61 GS  
JESTER, SHELBY L, 250 N PERSHING,67208  
263-1574

43 F 4102 74 ANES

JOHNSON, CAROL ANN, 3243 E MURDOCK SUITE 303,67208  
688-3070

49 F 1902 77 FP  
JOHNSON, GEORGE K, UKSM WICHITA,67214  
268-5984

40 M 1205 67 1M  
JOHNSON, THOMAS E, 3333 E CENTRAL,67208  
685-1291

41 M 1643 67 R  
JUDILLA JR, FRANCISCO, 2322 EAST CENTRAL,67214  
263-6186

44 M 74801 71 ANES  
KADISON, HERBERT I, ST FRANCIS HOSP,67214  
262-6211

44 M 1611 69 R  
KAROATZKE, E STANLEY, 224 ARCADIA,67212  
943-9342

39 M 1720 64 FP  
KAROATZKE, JON K, 10300 MAPLE,67209  
943-3271

36 M 1720 62 FP  
KASHA, ROBERT L, 5025 E KELLOGG,67218  
682-1534

11 M 2834 38 GS  
KASSEBAUM, KENNETH G, 3420 EAST DOUGLAS,67208  
685-6381

34 M 1606 60 CHP  
KAUFMAN, EUGENE E, 3243 E MURDOCK,67208  
685-1491

30 M 1902 56 ORS  
KEENE, GEORGE H, 5025 E KELLOGG,67218  
682-1534

20 M 1902 49 GS  
KEENY, M GARY, 841 N BROADWAY,67214  
263-6131

36 M 1902 66 FP  
KELLER, JAMES P, 1431 SOUTH BLUFFVIEW,67218  
685-1284

48 M 1902 74 1M  
KELLERMAN, RICK, 406 N BLUFF,67208  
688-2468

54 M  
KELLY, ROBERT W, 3243 E MURDOCK SUITE 605,67208  
682-6511

46 M 4802 72 OBG  
KENDALL, TOM E, 825 N EMPORIA,67214  
262-3495

37 M 3901 62 PS  
KENDRICK, J GILLERAN, 3333 E CENTRAL,67208  
682-6511

20 M 1902 46 OBG  
KENNEOY, GERALD T, 16069 CAVALCADE LANE,67230  
684-5243

35 M 1902 61 GE  
KHICHA, GYANCHAND J, 905 N EMPORIA,67214  
263-0296

37 M 49530 61 TS  
KHOURY, GEORGE H, 3333 E CENTRAL,67208  
681-2021

32 M 33002 55 PO  
KIM, PAIK N, 1035 N EMPORIA,67214  
262-4467

33 M 58302 58 HEM  
KIMBLE, JAMES A, 3244 E DOUGLAS,67208  
689-9316

45 M 702 71 OPH  
KIRK JR, E DAVID, 1431 S BLUFFVIEW DRIVE,67218  
685-1351

34 M 1902 62 1M  
KISER, JOHN L, 3243 E MURDOCK,67208  
685-6222

37 M 2802 62 GS  
KISER, WILLARD J, 3243 E MURDOCK,67208  
685-6222

05 M 4705 30 GS  
KITCHEN, ROBERT R, 3420 E DOUGLAS,67208  
685-2355

26 M 1902 52 CHP  
KLINTZ, WILLIAM JOSEPH, UKSM WICHITA,67214  
268-8388

51 M 1902 76 P  
KLUGMAN, JOSEPH, 3333 E CENTRAL,67208  
685-1291

46 M 2604 69 DR  
KNAPP, LESLIE E, 302 S CRESTWAY,67218  
-

96 M 1902 25 00  
KNAPP, M ROBERT, 37 VIA ROMA,67230  
684-7251

23 M 3519 47 ANES  
KNAPPENBERGER, ROY C, 3244 E DOUGLAS,67208  
689-9327

16 M 1902 41 PO



KNEIDEL, THOMAS W., 732 N TOPEKA, 67214  
267-1924  
40 M 4101 66 ORS  
KOURI, SAMMY H., 3243 E MURDOCK, 67208  
682-2911  
33 M 3901 57 GS  
KRAUSE, ROLAND L., 855 N HILLSIDE, 67214  
685-1381  
25 M 1902 53 1M  
KRUPKA, JOHN J., 959 N EMPORIA, 67214  
262-3613  
47 M 1642 73 NS  
KUBINA, GLENN RICHARD, 5205 E 21ST, 67208  
684-2838  
47 M 3840 72 OTO  
KURTH, C JOSEPH, 925 N EMPORIA, 67214  
263-6177  
10 M 3006 35 NP  
KUTILEK, FRANK J., 7200 W 13TH ST SUITE 3, 67212  
722-4258  
30 M 1902 57 FP  
LACEY, STEFFAN R., ST FRANCIS HOSP, 67214  
268-5000  
M 1902  
LAI, JENG Y., 959 N EMPORIA, 67214  
265-2613  
41 M 38502 67 TS  
LANCE JR, JOHN F., 3244 E DOUGLAS, 67208  
689-9438  
20 M 1902 45 ORS  
LATIMER, KATHERINE, 3243 EAST MURDOCK, 67208  
686-7327  
49 F 1205 75 ANES  
LAUVER, MARY ANN, 1001 N MINNEAPOLIS, 67214  
268-8302  
40 F 1902 74 PD  
LAWN, CLAUDIA A., MID KS RADIOLOGY CRCP, 67211  
265-1684  
50 F 1902 75 R  
LAWN, RAYMOND A., 715 N MISSIDN RD, 67206  
683-8991  
09 M 2604 35 AM  
LAZAR, HARRY, 611 N HILLSIDE, 67214  
684-0501  
08 M 1611 35 A  
LEE, R REX, 6155 E HARRY, 67218  
685-2306  
29 M 3901 55 FP  
LEE JR, EDWARD S., 2002 E 17TH ST, 67214  
264-8273  
09 M 4707 37 FP  
LEISY, JERALD W., 3310 E DOUGLAS SUITE 101, 67208  
681-2937  
42 M 1902 68 P  
LEVINE, WILLIAM R., UKSM-WICHITA, 67214  
268-8388  
42 M 1902 67 P  
LIES, RICHARD B., 3244 E DOUGLAS, 67208  
689-9111  
42 M 1902 68 RHU  
LIGGETT, SCOTT P., 3244 E DOUGLAS, 67208  
689-9453  
52 M 3005 77 1M  
LIN, JOE J., 8630 HUNTINGTON, 67206  
268-5420  
42 M 24404 69 PATH  
LINDLEY, MILTON E., 657 S TERRACE DR, 67218  
-  
14 M 1902 50 DO  
LINHARDT, RONALD D., 3243 E MURDOCK, 67208  
683-2655  
36 M 2803 64 OBG  
LITTLE, L GILBERT, 122 S WESTFIELD AVE, 67209  
263-7614  
99 M 401 27 P  
LOCKHART, JOSEPH G., 5900 E CENTRAL, 67208  
684-7239  
17 M 4113 43 PD  
LOEFFLER, JAMES A., 400 N WOODLAWN, 67208  
685-5375  
36 M 3841 63 A  
LOEWEN, HENRY H., 2142 W 17TH, 67203  
-  
03 M 1902 35 DO  
LOEWEN, WILLIAM C., 10300 W MAPLE, 67209  
943-3253  
41 M 1902 71 FP  
LOGAN, GEDFREY G., 212 N HILLSIDE, 67214  
682-4572  
31 M 14303 56 OBG  
LOVETT, PAUL A., 110 PATTON, 67208  
683-6683  
09 M 1902 45 ORS

LOW, HARDLD L., 201 S PERSHING, 67218  
684-2858  
18 M 1902 44 FP  
LUEKEN, LUEKE B., 3244 E DOUGLAS, 67208  
689-9234  
23 M 40723 52 OBG  
LUELLEN, THOMAS J., 3244 E DOUGLAS, 67208  
689-9244  
17 M 1902 41 1M  
LUZZATI, ENZO F., ST FRANCIS HOSPITAL, 67214  
262-6211  
25 M 56119 50 R  
MADISON JR, WARD N., 3600 E HARRY, 67218  
686-9432  
37 M 3601 62 PATH  
MAGIDSON, ELLIDT ARTHUR, 424 N WOODLAWN, 67208  
686-2193  
43 M 1611 68 PATH  
MAILMAN, GERSHOM, ST JOSEPH MED CENTER, 67218  
685-1111  
26 M 2803 49 ANES  
MALIK, MUMTAZ ILAHI, 1035 N EMPORIA 290, 67214  
265-1631  
47 M 70401 70 ORS  
MANNING, ROBERT T., 1001 N MINNEAPOLIS, 67214  
268-8378  
27 M 1902 54 1M  
MANSOUR, BADI E S., 3243 E MURDOCK SUITE 401, 67208  
686-7327  
45 M 33002 69 ANES  
MARSH, HENRY D., 925 N EMPORIA, 67214  
262-7598  
18 M 1611 43 ORS  
MARTIN JR, GLEN E., 2322 E CENTRAL, 67214  
263-6186  
20 M 1902 49 ANES  
MARYMONT JR, JESSE H., WESLEY MED CENTER, 67214  
685-2151  
28 M 3515 54 PATH  
MASSEY, ANDREW D., 1001 N MINNEAPOLIS, 67214  
268-8378  
50 M 1902 79 1M  
MASTIO JR, GEORGE J., 3243 E MURDOCK, 67208  
684-5235  
25 M 1902 52 GS  
MATASSARIN, BENJAMIN W., 2916 E CENTRAL, 67214  
684-5243  
20 M 1902 45 1M  
MATASSARIN, FREDERICK W., 734 N EMPORIA, 67214  
265-2382  
15 M 1902 37 U  
MAWDSLEY, MICHAEL W., 3333 EAST CENTRAL #610, 67208  
686-6659  
49 M 1902 74 PD  
MCCLANAHAN, WARD A., 5105 E 21ST, 67208  
684-8211  
22 M 3005 48 ORS  
MCCLELLAN, ERNEST L., 3243 E MURDOCK SUITE 401, 67208  
686-7327  
38 M 4802 70 ANES  
MCCOY, CHARLES P., 3333 E CENTRAL, 67208  
682-6511  
17 M 3006 42 OBG  
MCGUIRE, WILLIAM F., 3333 E CENTRAL, 67208  
683-5655  
17 M 4101 43 PD  
MCMAHON, MERRI M., 1001 NORTH MINNEAPOLIS, 67214  
248-8378  
46 F 5404 72 1M  
MCREYNOLDS, CHARLES R., WESLEY MED CENTER, 67214  
688-2899  
21 M 3840 47 PATH  
MEADOWS, DONALD C., 3333 E CENTRAL, 67208  
683-5611  
36 M 102 69 OPH  
MEEKER II, BRUCE P., 345 N HILLSIDE, 67214  
686-3384  
30 M 1902 58 OBG  
MELEAN, JAIME, 1152 SCUTH CLIFTON, 67218  
681-2401  
40 M 17602 65 CD  
MELHORN, J MARK, 550 N HILLSIDE, 67214  
-  
53 M 1902 80  
MENAKER, JEROME S., 2703 E CENTRAL, 67214  
685-1227  
16 M 1002 41 OBG  
MENDIONES, L MARLENE, 835 N HILLSIDE, 67214  
685-4395  
45 F 1611 70 D  
MENDIONES, RUPERTO D., 3243 E MURDOCK -SUITE 404, 67208  
682-6585  
44 M 1611 71 1M

MENEHAN, H JAMES, 3244 E DOUGLAS, 67208  
689-9404  
26 M 1902 53 PD  
MENKING, F W MANFRED, 3244 E DOUGLAS, 67208  
689-9336  
34 M 40715 61 PD  
MENKING, SUSAN MARGARET, UKSM WICHITA, 67214  
268-8302  
41 F 3840 67 PD  
MERCADER, MARIO S, 2322 E CENTRAL, 67214  
263-6186  
43 M 74801 64 ANES  
MEREDITH, W TOM, 1035 N EMPORIA, 67214  
263-7285  
35 M 4812 61 1M  
MERRITT, JOE P, 3243 E MURDOCK, 67208  
688-5211  
46 M 2802 71 08G  
MERSHDN, JAMES C, 925 N EMPORIA - SUITE A, 67214  
263-5889  
37 M 1803 63 1M  
MEULBROEK, HARVEY J, 3244 E DOUGLAS, 67208  
689-9156  
31 M 5605 56 A  
MEYER, WARREN E, 1144 S CLIFTON, 67218  
684-5237  
27 M 1606 51 GS  
MICHELBAACH, ALBERT P, 2916 E CENTRAL, 67214  
684-5243  
35 M 2101 61 1M  
MILFELD, DOUGLAS J, 905 N EMPORIA, 67214  
263-0296  
45 M 4804 72 TS  
MILLER, CLYDE W, 7618 DONEGAL, 67206  
-  
09 M 2002 36 DD  
MILLER, DAVID PATERSON, 3243 E MURDOCK SUITE 303, 67208  
688-3070  
50 M 2803 77 FP  
MILLER, DDN E, 4145 E KELLOGG, 67218  
682-6551  
20 M 2802 44 GS  
MILLER, PHILIP A, 1152 S CLIFTON, 67218  
684-2081  
44 M 1902 70 GS  
MILLS, CHARLES D, 1144 S WATER, 67213  
-  
89 M 2002 14 00  
MILLS, GEORGE QUINTON, 550 N HILLSIDE, 67214  
688-2810  
48 M 3006 73 PATH  
MINNS, GARDLD O, UKSM-WICHITA DEPT OF MED, 67214  
268-8378  
51 M 1902 76 1M  
MIRZA, MEDO, 3333 E CENTRAL, 67208  
686-6683  
38 M 40733 64 PDS  
MDORE, DENNIS F, 1035 N EMPORIA, 67214  
265-3226  
36 M 2101 62 HEM  
MDORE, JANE A, WESLEY MED CENTER, 67214  
688-2239  
50 F 3901 76 EM  
MORGAN, DICK A, 3243 E MURDOCK SUITE 401, 67208  
686-7327  
43 M 3901 69 ANES  
MORGAN, JAMES I, 3124 S SENECA, 67217  
522-2266  
29 M 1606 53 FP  
MORGAN III, LOUIS S, 8030 E KELLOGG, 67207  
683-3811  
22 M 3901 48 FP  
MORRISON, RICHARD L, 1148 S HILLSIDE, 67211  
564-2423  
42 M 1902 67 FP  
MORROW, THOMAS F, 3310 E DOUGLAS, 67208  
685-1443  
21 M 5606 46 P  
MDSELEY, JACK E, 1120 S CLIFTON, 67218  
682-4982  
25 M 3901 53 FP  
MOSIER, STANLEY JAY, 3243 E MURDOCK, 67208  
685-8231  
42 M 1902 68 FP  
MUELLER, VERNETTE A, 1431 S BLUFFVIEW, 67218  
684-3981  
17 M 2802 41 08G  
MULLINIX, JANICE M, 3243 MURDOCK, 67208  
685-2377  
47 F 3006 73 N  
MURPHY, BARRY L, 3243 EAST MURDOCK #500, 67208  
684-0251  
45 M 1902 71 1M

MURPHY, DUANE A, 3243 E MURDOCK, 67208  
685-1491  
32 M 1902 65 ORS  
MURPHY, PAUL M, 3600 E HARRY, 67218  
685-1111  
28 M 3006 51 R  
MURRAY, KENT B, VETERANS MEDICAL CENTER, 67218  
263-6131  
47 M 3901 73 IM  
MYERS, AGNES E, UKSM-WICHITA, 67214  
688-2468  
29 F 2803 63 PD  
NELSON, GERALD D, 825 N EMPORIA, 67214  
262-3495  
34 M 1902 60 PS  
NELSON, RUSSELL ALAN, 3333 E CENTRAL, 67208  
685-5271  
18 M 1902 45 PD  
NELSON JR, GUST H, 3600 E HARRY, 67218  
685-1111  
23 M 1902 46 DR  
NESMITH, LESLIE W, 3333 E CENTRAL, 67208  
683-5611  
40 M 1902 66 DPH  
NEWBY, JAMES P, 905 N EMPORIA, 67214  
263-0296  
34 M 1902 59 TS  
NEWSOM, F CARTER, 3310 E DOUGLAS, 67208  
685-1443  
18 M 1201 43 P  
NIXON, WILLIAM A, 3333 E CENTRAL, 67208  
683-6622  
16 M 1902 44 GS  
NORRIS, ROBERT P, 3244 E DOUGLAS, 67208  
689-9232  
17 M 1902 43 1M  
NORTH, DORIS G, 1148 S HILLSIDE, 67211  
684-5257  
16 F 1902 47 FP  
NORTH, VICTOR, 1148 S HILLSIDE, 67211  
684-5257  
18 M 1902 47 FP  
NORTON, ROBERT K, 3244 E DOUGLAS, 67208  
689-9235  
32 M 1001 57 PD  
NOWLIN, NANCY S, 1001 N MINNEAPOLIS, 67214  
268-8378  
47 F 1902 74 IM  
NYBERG, FREDRIK F, 3333 E CENTRAL, 67208  
685-7234  
22 M 2101 46 GYN  
O'DONNELL JR, LEONARD A, 8033 E DOUGLAS, 67207  
684-2835  
27 M 1902 55 1M  
O'DONNELL SR, LEONARD A, 7 ST JAMES PLACE, 67206  
-  
02 M 5606 26 00  
OCHSNER, BRUCE B, 1035 N EMPORIA STE 215, 67214  
263-6273  
39 M 1902 65 OPH  
ODENHEIMER, BURTRAM J, 3244 E DOUGLAS, 67208  
689-9137  
48 M 2105 73 N  
ODULLO, PERLITA, ST JOSEPH MED CENTER, 67218  
685-1111  
39 F 74807 63 PM  
OLSON, BARBARA J, 3244 E DOUGLAS, 67208  
689-9137  
49 F 5606 81 CHN  
OSBORNE, CONRAD C, 855 N HILLSIDE, 67214  
685-1381  
38 M 1902 67 FP  
OSIO, ANTONIO L, 1520 S CLIFTON, 67218  
685-2371  
41 M 26404 65 EM  
OSDRA, WILLIAM G, 2525 W 13TH, 67203  
943-9391  
25 M 2802 51 FP  
OWEN, LARUE W, 303 S HILLSIDE, 67211  
684-7251  
19 M 1902 50 ANES  
OWEN, PERE A, 303 S HILLSIDE, 67211  
684-7251  
37 M 1902 64 ANES  
PADGETT, WILLIAM L, 606 STRATFORD, 67206  
-  
24 M 1902 51 FP  
PAGE, RUTH, 1051 N STRATFORD, 67206  
-  
13 F 1902 43 DO  
PALMER, DAVID L, 4805 W CENTRAL, 67212  
945-5177  
37 M 1902 63 PATH



PARK, ROGER WALTER, 3244 E DOUGLAS, 67208  
 689-9217  
 43 M 1902 69 PD  
 PARKER, HAROLD L, 2932 BENJAMIN, 67204  
 262-3765  
 32 M 1902 67 FP  
 PATTERSON, BRUCE W, 1520 SOUTH CLIFTON, 67218  
 685-2371  
 46 M 1902 73 EM  
 PAY, NORMAN T, ST FRANCIS HOSP, 67214  
 268-5914  
 45 M 74802 68 NR  
 PENCE, CHARLES D, 3244 EAST DOUGLAS, 67208  
 689-9468  
 42 M 1902 68 ORS  
 PENNINGTON, KATHERINE, 2113 SO BLUFF CT, 67218  
 685-5271  
 16 F 1902 43 PD  
 PETERIE, JERRY P, 1001 N MINNEAPOLIS, 67214  
 268-8378  
 48 M 1902 75 IM  
 PETERS, THOMAS J, 3244 E DOUGLAS, 67208  
 689-9190  
 47 M 2803 77 IM  
 PHIPPS, JACK G, 315 N HILLSIDE, 67214  
 686-3391  
 21 M 1902 53 FP  
 PICKENS, ANDREW T, 3101 E NINTH, 67214  
 684-0201  
 43 M 2834 — P  
 PINSKER, JACOB A, 1035 N EMPORIA, 67214  
 267-8259  
 06 M 1902 35 IM  
 POLING, TERRY L, 6155 E HARRY, 67218  
 685-2306  
 36 M 1902 62 FP  
 POLLACK, SIMON, 7523 PLAZA LANE, 67206  
 —  
 M 36 00  
 POLLARD DO, STEPHEN M, 1035 N EMPORIA #185, 67214  
 265-5291  
 39 M 2878 68 PM  
 POLLOCK, ANTHONY G A, 1035 N EMPORIA STE 140, 67214  
 265-1631  
 45 M 8305 71 ORS  
 POOLE, BERNARD T, 1035 N EMPORIA, 67214  
 264-2806  
 37 M 53902 62 ORS  
 PORTER, GARRY L, 3243 E MURDOCK STE 400, 67208  
 686-7351  
 35 M 1606 61 P  
 POWERS, K DEAN, 2703 E CENTRAL, 67214  
 685-1277  
 23 M 1902 47 OBG  
 PRIETO, LUIS E, 959 N EMPORIA #203, 67214  
 265-2613  
 39 M 26407 65 IM  
 PULLMAN, NORMAN K, 3007 E CENTRAL, 67214  
 686-7369  
 21 M 3006 45 P5  
 PURINTON, LEW W, 1431 S BLUFFVIEW DR, 67218  
 685-1301  
 23 M 1902 48 IM  
 PUTNAM, LYLE B, 1035 N EMPORIA, 67214  
 262-5037  
 11 M 1902 36 FP  
 RAGHAVAN, PARULA P, 8406 E HARRY #909, 67207  
 —  
 47 F 49501 70 IM  
 RAGHAVAN, PRAKASH V, 1144 N ST FRANCIS, 67214  
 267-0159  
 46 M 49501 69 CD  
 RANDALL, GEORGE R, 5205 E 21ST, 67208  
 684-2838  
 43 M 2802 69 OTO  
 RANGLES, MICHAEL J, 959 N EMPORIA, 67214  
 265-0789  
 48 M 1902 73 IM  
 RAUSA JR, FRANCISCO C, 1148 SOUTH HILLSIDE, 67211  
 683-4658  
 42 M 74808 66 IM  
 RAWCLIFFE JR, ROBERT A, 732 N TOPEKA, 67214  
 267-1924  
 29 M 3501 55 ORS  
 RAZEK, ZACK A, 905 NCRTH EMPORIA, 67214  
 263-0296  
 46 M 60501 70 COT5  
 READER, GEORGE WHITNEY, 925 N EMPORIA, STE A, 67214  
 263-5889  
 48 M 2101 — IM  
 REALS, WILLIAM J, UKSM-WICHITA, 67214  
 268-8224  
 20 M 3006 45 PATH  
 REAZIN, WALTER L, 1430 HCMESTEAD, 67208  
 685-1381  
 30 M 1902 58 FP  
 REDDI, RAGHUNATH P, 8724 GRAND, 67207  
 685-1111  
 36 M 49521 64 RT  
 REED, A J, 1520 S CLIFTON, 67218  
 685-2371  
 40 M 3901 65 EM  
 REED, D CRAMER, WESLEY MED CNTR/PROF DEV, 67214  
 688-2080  
 15 M 2802 41 ADM  
 REED, DAVID D, 3333 E CENTRAL, 67208  
 685-1291  
 43 M 1902 69 DR  
 REEVES, BRADFORD F, 3333 E CENTRAL, 67208  
 685-1291  
 37 M 4812 62 R  
 REISMAN, MICHAEL ALAN, 3243 E MURDOCK SUITE 600, 67208  
 683-5688  
 50 M 4804 75 OPH  
 RELIHAN, DONALD A, 3333 E CENTRAL, 67208  
 684-5158  
 27 M 1902 54 OPH  
 REMPEL, JOHN H, 3333 E CENTRAL, 67208  
 685-1812  
 38 M 3901 62 P5  
 RHODAS, JAMES P, 3244 E DOUGLAS, 67208  
 689-9106  
 34 M 3520 60 IM  
 RHODEN, CURTIS H, 3243 E MURDOCK, 67208  
 684-0252  
 33 M 1803 59 IM  
 RHODES, IVAN E, 3333 E CENTRAL, 67208  
 685-1291  
 25 M 3901 49 R  
 RHODES, LOWELL M, 315 N HILLSIDE, 67214  
 685-1461  
 25 M 1902 53 FP  
 RICHARDSON, STEWART F, 3420 E DOUGLAS, 67208  
 685-2321  
 28 M 3005 54 P  
 RIEDERER, ROBERT E, 1131 S CLIFTON, 67218  
 685-4354  
 16 M 1902 42 FP  
 RIEGER, ERNEST H, 3243 E MURDOCK, 67208  
 682-4591  
 29 M 1902 56 G5  
 RIEPE, ROGER E, WESLEY MED CENTER, 67214  
 688-2810  
 46 M 1803 74 PATH  
 RIORDAN, HUGH D, 434 N OLIVER, 67208  
 682-9241  
 32 M 5605 57 P  
 ROACH, NEIL E, UKSM - WICHITA, 67214  
 268-8388  
 38 M 1902 67 CP  
 ROBERTS, DANIEL K, WESLEY MED CENTER, 67214  
 688-3185  
 36 M 3005 61 OBG  
 ROBERTS, LOUIS S, 115 S RUTAN, 67218  
 —  
 95 M 2834 20 00  
 ROBERTSON, JOSEPH K, 905 N EMPORIA, 67214  
 263-0296  
 41 M 3901 66 G5  
 ROBINSON, G DONALD, 3333 E CENTRAL, 67208  
 686-6659  
 28 M 1902 54 PD  
 ROBINSON, JOHN E, 3243 E MURDOCK STE 400, 67208  
 686-7351  
 32 M 6201 50 P  
 ROBINSON, ROBERT H, 3244 E DOUGLAS, 67208  
 689-9445  
 20 M 1902 53 ANE5  
 ROBL, DAVID A, 10300 W MAPLE, 67209  
 262-3765  
 48 M 1902 74 FP  
 RODRIGUEZ-TOCKER, LILIA, 1111 N ST FRANCIS, 67214  
 265-2613  
 21 F 27501 49 IM  
 ROMALIS, BRIAN E, 3420 E DOUGLAS, 67208  
 682-5069  
 39 M 6201 63 P  
 ROOS, MAUREEN, 1035 N ST FRANCIS APT 18, 67214  
 265-2876  
 53 F 1902 75 FP  
 ROSE, SHELBY D, 3333 E CENTRAL, 67208  
 681-2741  
 40 M 2012 68 PATH  
 ROSEN, DAVID, 1035 N EMPORIA STE 265, 67214  
 265-3226  
 48 M 1902 74 PD

ROSENBERG, THCMAS F, 611 N HILLSIDE,67214  
684-0501  
41 M 1642 68 A  
ROSS, DENNIS LEE, 1035 N EMPORIA 105,67214  
263-7285  
47 M 3005 73 NEP  
RUSSELL, PHILIP W, 3244 E DOUGLAS,67208  
689-9351  
22 M 1902 44 IM  
SABIN JR, GEORGE M, 707 N MAIN,67203  
265-6601  
12 M 5002 39 ADM  
SADIO, SULEMAN, 1144 N ST FRANCIS,67214  
267-0159  
40 M 70401 63 TS  
SALGADO, CARLOS R, 1144 N ST FRANCIS,67214  
267-0159  
33 M 13201 55 CD  
SANDERS, GLORIA DEANNA, OSTEOPATHIC HOSPITAL,67212  
945-9161  
50 F 1902 75 PATH  
SANTOSCOY, GILBERT S, 3244 E DOUGLAS,67208  
689-9124  
38 M 4812 62 GS  
SCANLAN, TIMOTHY M, 1122 N TOPEKA,67214  
265-2876  
46 M 2604 71 FP  
SCHILTZ, FRANCES, 115 S RUTAN #108,67218  
-  
93 F 6701 23 OO  
SCHLACHTER, ERNEST R, 406 E CENTRAL,67202  
265-0705  
24 M 1902 52 FP  
SCHLICHER, JOHN E, 3244 E DOUGLAS,67208  
689-9346  
40 M 1803 66 D  
SCHLUETER, JOHN J, 3333 E CENTRAL,67208  
685-9289  
31 M 3841 56 R  
SCHNELLE, JOACHIM, 4145 EAST KELLOGG,67218  
682-0621  
44 M 40933 70 FP  
SCHOPF, CLIFTON C, FAMILY PRACTICE CLINIC,67214  
262-3765  
29 M 1902 57 FP  
SCHWARTZ, V DEAN, 400 N WOODLAWN #4,67208  
684-3881  
24 M 1902 48 FP  
SCOTT, VINCENT L, 72 MISSION RD,67207  
-  
03 M 3806 29 OO  
SCOTT, WILLIAM H, 1431 S BLUFFVIEW STE 111,67218  
685-1111  
41 M 4901 65 CD  
SEN SARMA, PRONAB K, 1144 N ST FRANCIS,67214  
267-0159  
45 M 49518 71 CD  
SHAFFER, PRESTON J, 3333 E CENTRAL,67208  
682-6511  
20 M 3005 46 OBG  
SHAH, MUKHTAR H, 841 S HILLSIDE,67211  
686-2994  
40 M 70404 63 P  
SHAW, JAMES W, 150 S EATTIN,67218  
-  
98 M 1601 27 OC  
SHAW, RICHARD C, 825 N EMPORIA,67214  
262-3495  
35 M 1902 61 PS  
SHELLITO, JOHN G, 3244 E DOUGLAS,67208  
689-9124  
18 M 1606 43 TS  
SHIELD, CHARLES 905 N EMPORIA, 67214  
263-0296  
46 M 2802 — GS  
SHIFLET, ALBERT W, 841 N BROADWAY,67214  
-  
06 M 3901 33 OO  
SHRAOER, DOYLE A, 3333 E CENTRAL,67208  
682-4851  
16 M 1902 41 EENT  
SIEGEL, ALBERT R, 3600 E HARRY,67218  
685-1111  
22 M 1642 47 PM  
SIFFORD, R LAWRENCE, 959 N EMPORIA,67214  
265-0561  
25 M 1803 52 IM  
SKIBBA, RICHARD M, 3244 E DOUGLAS,67208  
689-9477  
43 M 5606 70 GE  
SLUTSKY, LAWRENCE JCEL, ST FRANCIS HOSPITAL,67214  
268-5922  
46 M 3501 72 DR  
SMITH, ALVIN L, 929 N ST FRANCIS,67214  
262-6211  
28 M 5606 57 PATH  
SMITH, TIMOTHY WM, 1035 N EMPORIA #185,67214  
265-5291  
49 M 1902 74 IM  
SMITH JR, WILLARD J, 851 N HILLSIDE,67214  
685-1371  
32 M 1611 57 U  
SNYDER, GREGG M, 3243 E MURDOCK,67208  
685-2377  
27 M 1803 54 NS  
SOLOMON, HERMAN, 835 N HILLSIDE,67214  
685-4395  
37 M 2701 62 O  
SOLTZ, ROBERT A, 3244 EAST DOUGLAS,67208  
689-9381  
47 M 2803 74 PD  
SOMERS, MARVIN M, ST FRANCIS HOSP,67214  
262-6211  
23 M 1902 48 R  
SPANN, RICHARD W, 3243 E MURDOCK,67208  
684-0252  
40 M 1902 65 PUD  
STANLEY, KENNETH E, 959 N EMPORIA,67214  
267-0256  
31 M 1902 56 U  
STARK, JAMES R, 3244 E DOUGLAS,67208  
689-9422  
20 M 1902 44 R  
STECKLEY, RICHARD ALLEN, 1035 EMPORIA SUITE 130,67214  
263-3271  
49 M 2105 74 IM  
STEIN, PAUL S, 3243 E MURDOCK,67208  
685-2377  
40 M 3305 66 NS  
STEMBRIDGE, TRAVIS W, 3333 E CENTRAL SUITE 301,67211  
685-7234  
47 M 4802 76 OBG  
STEWART, JACK T, 4815 E CENTRAL,67208  
683-8401  
30 M 2802 57 IM  
STOLZ, ELMER G, 2349 MC LEAN BLVD NW,67204  
265-6287  
17 M 3006 45 FP  
STREET, DAVID E, 905 N EMPORIA,67214  
263-0296  
35 M 2101 61 GS  
STREIT, JEROME G, 1131 S CLIFTON,67218  
685-4354  
48 M 1902 77 FP  
STRICKLAND, MAURICE VAN, 3244 E DOUGLAS,67208  
689-9156  
51 M 4804 74 A  
STRYKER, TERRY MARGARET, 3243 E MURDOCK - STE 300,67208  
685-8231  
47 F 1002 75 FP  
SUERO, JESUS T, 1152 SOUTH CLIFTON,67218  
681-1671  
33 M 74802 57 PUD  
SULLIVAN, CORNELIUS J P, 1431 BLUFFVIEW DR,67218  
685-4851  
18 M 3509 43 OBG  
SULLIVAN, LEONARD L, 3244 E DOUGLAS,67208  
689-9454  
35 M 1902 61 PD  
SVORODA, WILLIAM B, 3243 MURDOCK SUITE 601,67208  
685-2377  
36 M 1602 63 PON  
SWISHER, WILLIAM C, 1425 WILLCOX LANE,67208  
682-1534  
21 M 1902 47 OBG  
TATPATI, DANIEL A, 1144 N ST FRANCIS,67214  
267-0159  
44 M 49535 67 TS  
TATPATI, CLGA ADELINA, U K S M - WICHITA,67214  
268-5992  
44 F 49535 67 PD  
TAYLOR, RICHARD J, 929 N ST FRANCIS,67214  
262-1952  
21 M 3006 49 PATH  
TAYLOR, STEVEN L, USAF HOSP,67210  
681-5866  
46 M 1902 77 GP  
THELEN, J CHRISTINE, 1738 N ROOSEVELT,67208  
-  
13 F 5104 37 CO  
THOMPSON, DANIEL M, PD BOX 4044,67204  
838-3381  
19 M 1902 50 FP  
TIHEN, EDWARD N, 3244 E DOUGLAS,67208  
689-9481  
24 M 1606 48 IM



TIHEN, HENRY N, 1227 N RIVER BLVD, 67203

96 M 1601 19 DO  
 TILLER, GEDRGE R, 5101 E KELLOGG, 67218  
 684-5255  
 41 M 1902 67 AM  
 TILTDN, FRANK M, 3244 E DDUGLAS, 67208  
 689-9137  
 33 M 2002 59 N  
 TINKER, ROBERT C, 1126 S CLIFTON, 67218  
 682-7578  
 31 M 2834 57 ORS  
 TINTERCW, MAURICE M, 3333 E CENTRAL, 67208  
 685-4389  
 17 M 4802 41 ANES  
 TIPPIN JR, ERNEST E, 959 N EMPORIA, 67214  
 265-5256  
 24 M 1902 50 OTD  
 TDCKER, ALFRED M, 1111 N ST FRANICS, 67214  
 265-2613  
 15 M 4802 40 TS  
 TONN, GERHART R, 855 N HILLSIDE, 67214  
 685-1381  
 16 M 1902 44 FP  
 TDSH, FRED E, 1900 E NINTH, 67214  
 268-8391  
 30 M 4706 54 PH  
 TRACY, TERRY A, 3333 E CENTRAL, 67208  
 686-7301  
 35 M 2803 61 D8G  
 TRET8AR, HARVEY A, 3243 E MURDOCK #500, 67208  
 684-0251  
 25 M 1902 52 IM  
 TREWEEKE, MICHAEL W, 2916 EAST CENTRAL, 67214  
 684-5234  
 46 M 1902 72 IM  
 TRUDEAU, DAVID L, ALCOHOL TREATMENT UNIT, 67218  
 685-1111  
 40 M 2604 66 ADT  
 TRUJILLO, ANTERO A, 3600 E HARRY, 67218  
 685-1111  
 36 M 73701 61 ANES  
 UHLIG, PAUL J, 3244 E DOUGLAS, 67208  
 689-9191  
 28 M 1902 57 PD  
 ULRICH, BRIAN K, 1035 N EMPDRIA, 67214  
 265-3226  
 48 M 1902 74 IM  
 VAN LEEUWEN, GERALD, UKSM-WICHITA, 67214  
 268-8221  
 29 M 1803 54 NEO  
 VIN ZANT, LARRY E, 1431 BLUFFVIEW, 67218  
 682-6532  
 10 M 1902 40 GS  
 VINE, DONALD LEE, 3244 E DOUGLAS, 67208  
 689-9240  
 39 M 511 66 CD  
 VINZANT, WHITNEY L, 1431 SDUTH BLUFFVIEW #109, 67218  
 685-2135  
 45 M 1902 71 GS  
 VDRHEES, VICTOR J, 3243 E MURDDCK, 67208  
 685-8231  
 36 M 1902 68 FP  
 VOTH, DOUGLAS W, UKSM-WICHITA DEPT OF IM, 67214  
 268-8378  
 34 M 1902 59 IM  
 WADUD, ABDUL, 1543 S HILLSIDE, 67211  
 682-6814  
 35 M 70409 60 P  
 WALTERS, ROBERT MERRILL, 3244 E DOUGLAS, 67208  
 789-9495  
 41 M 2802 74 DRS  
 WARREN, LLOYD P, 5205 E 21ST, 67208  
 683-7223  
 11 M 1902 36 DPH  
 WARREN, WIRT A, 352 N BRDADWAY, 67202  
 267-5031  
 09 M 2802 33 GER  
 WARREN JR, JOHN W, 3244 E DOUGLAS, 67208  
 689-9239  
 15 M 2501 39 U  
 WEAVER, J ROBERT, 959 N EMPORIA, 67214  
 265-5731  
 21 M 1902 48 FP  
 WEAVER, JACK D, 959 N EMPDRIA, 67214  
 265-7241  
 16 M 2802 42 OPH  
 WEBER JR, HUGO P, 1035 N EMPORIA, 67214  
 263-7285  
 40 M 702 66 IM  
 WEBSTER, 8DBBY W, 3333 E CENTRAL SUITE 303, 67208  
 685-0559  
 48 M 4802 74 OBG

WEDIN, PAUL H, 1 PEACH TREE LANE, 67207

08 M 1902 38 CC  
 WEIPPERT, EDWARD J, 10300 W MAPLE, 67209  
 943-3271  
 44 M 1902 70 FP  
 WELCH, LAUREN K, 3243 E MURDOCK, 67208  
 685-2377  
 35 M 1902 61 N  
 WELCH, MARTIN H, UKSM-WICHITA, 67214  
 268-8378  
 36 M 5605 61 IM  
 WELLSHEAR, CHARLES C, PD BDX 8037, 67214  
 684-0201  
 30 M 4706 58 P  
 WENINGER, JOHN H, 1148 S HILLSIDE, 67211  
 682-6523  
 32 M 3005 62 FP  
 WEST, WILLIAM T, 3244 E DOUGLAS, 67208  
 689-9234  
 24 M 1902 49 O8G  
 WHALLDN, JACDB T, 202 N ROCK RD APT 120, 67206  
 -  
 14 M 1720 41 OO  
 WHEELER, NICKY RAY, 3007 E CENTRAL, 67214  
 686-7369  
 48 M 1902 74 PS  
 WHEELER, PINCKNEY R, 2208 W 13TH, 67203  
 943-2118  
 18 M 3901 56 FP  
 WHITAKER, JAMES A, 3243 E MURDOCK, 67208  
 684-0251  
 44 M 1902 72 IM  
 WHITE, CHARLES M, 3244 E DOUGLAS, 67208  
 689-9422  
 15 M 3005 41 R  
 WIBERG, THOMAS A, PO BOX 594, 67201  
 263-3271  
 48 M 2604 74 CD  
 WILDER, LDWELL W, 3333 E CENTRAL, 67208  
 684-5158  
 35 M 4109 62 DPH  
 WILKINSON, LARRY K, 1520 S CLIFTDN, 67218  
 685-2371  
 46 M 1902 74 FP  
 WILLIAMS, CHARLES L, 3244 E DDUGLAS, 67208  
 689-9268  
 16 M 2834 43 IM  
 WILLIAMS, HOWARD V, 1439 GDEBEL CIRCLE, 67207  
 268-8251  
 18 M 1205 43 P  
 WINCHELL, H H FDRSYTH, P D BDX 11344, 67211  
 265-1684  
 34 M 3545 58 R  
 WINCHESTER, EUGENE B, 1148 S HILLSIDE, 67211  
 684-0271  
 18 M 3006 56 FP  
 WISDDM, JAY K, 1148 S HILLSIDE, 67211  
 684-0271  
 12 M 1902 42 FP  
 WISNER JR, HARRY J, 3244 E DOUGLAS, 67208  
 689-9169  
 17 M 3005 43 IM  
 WITTMANN, ALBERT F, 2323 N WDDDLAWN, 67220  
 -  
 10 M 2834 38 OO  
 WOLF, PATRICK G, 401 S CHAUTAUQUA, 67211  
 265-3979  
 52 M  
 WOLFE, FREDERICK, 6611 E CENTRAL, 67206  
 686-1152  
 36 M 3508 66 RHU  
 WOOD, GARY B, 1148 S HILLSIDE, 67211  
 684-2131  
 21 M 2802 45 IM  
 WOODHCUSE, CHARLES L, 959 N EMPORIA, 67214  
 265-8821  
 10 M 1902 34 ENT  
 \*WORSING JR, ROBERT A, 3244 E DOUGLAS, 67208  
 689-9175  
 47 M 2604 72 DRS  
 WRAY, ALEXANDER J, 120 E 21ST ST, 67214  
 838-4912  
 19 M 1902 49 FP  
 WU, JIN-TZE, 3333 E CENTRAL SUITE 214, 67208  
 688-2920  
 41 M 38502 67 TR  
 YOCKEY, CHARLES C, 3243 E MURDOCK, STE 500, 67208  
 684-2051  
 46 M 1902 77 IM  
 YOUNG, DOUGLAS L, 3244 E DDUGLAS, 67208  
 689-9213  
 42 M 1902 71 IM

YDUNG, ROBERT, WESLEY HOSP OB-GYN DEPT, 67214  
 685-2563  
 48 M  
 YOUNGBERG, DEAN I, 2916 EAST CENTRAL, 67214  
 684-5243  
 46 M 1902 72 IM  
 ZARNOW, HILARY, 8610 BRENTMCDR, 67206  
 263-3219  
 45 M 1611 69 R  
 ZATZKIN, JAY B, 1035 N EMPORIA, 67214  
 262-4467  
 46 M 2002 74 IM  
 ZEPICK, LYLE F, 925 N EMPORIA, STE A, 67214  
 263-5889  
 50 M 06001 — CD  
 ZIMMERMAN, KENNETH D, 934 CRESTLINE, 67212  
 687-3925  
 29 M 3901 65 OM  
 ZONGKER, PHILIP E, 3244 E DOUGLAS, 67208  
 689-9422  
 43 M 1902 70 R

**WILSON—913**  
*(Central Kansas Society)*

DLABAL, FRANK A, PO BOX 160, 67490  
 658-2400  
 07 M 1902 45 FP

**WINCHESTER—913**  
*(Jefferson County Society)*

HUSTON, FRANCIS W, .66097  
 774-2150  
 06 M 1601 34 FP

**WINFIELD—316**  
*(Cowley County Society)*

CARRO, F AURELIO, SNYDER CLINIC, 67156  
 221-3200  
 23 M 27501 49 IM  
 DAEHNKE, SIGURD S, SNYDER CLINIC, 67156  
 221-3200  
 26 M 3005 60 FP  
 FOWLER, DENNIS L, 1317 WHEAT RD, 67156  
 221-2300  
 48 M 1902 73 ES  
 HUTCHINSON, DIRK T, 1317 WHEAT RD, 67156  
 221-3200  
 48 M 3901 74 IM  
 KAUFMAN, LELAND R, 221 WEST 8TH, 67156  
 221-3350  
 33 M 1902 61 FP  
 KAUL, ANAND N, SNYDER CLINIC, 67156  
 221-3200  
 39 M 49530 61 IM  
 LAWRY, JAMES VORIS, 1017 E EIGHT, 67156  
 221-3200  
 40 M 502 77 GP  
 MAC KILLOP JR, DANIEL, 4 FLEETWOOD DR, 67156  
 —  
 11 M 2407 38 OO  
 MILLER, FRANKLIN R, BOX 544, 67156  
 —  
 02 M 2401 27 IM  
 NEMMERS, DAVID J, SNYDER CLINIC, 67156  
 221-3200  
 34 M 1803 59 IM  
 SAMUEL, CHANDY C, 1211 E 5TH, 67156  
 221-6100  
 35 M 49527 59 GS  
 SHAH, ASHOK H, 1317 WHEAT RD, 67156  
 221-3200  
 41 M 49548 66 OBG  
 SNYDER, C JOHN, 1317 WHEAT RD, 67156  
 221-3200  
 38 M 2401 64 GS  
 SNYDER, HOWARD E, 1317 WHEAT ROAD, 67156  
 221-3200  
 03 M 4102 27 GS  
 WELLS, ALVIN Y, 1707 E 10TH, 67156  
 —  
 97 M 1902 37 OO

WELLS, BRUCE W, 221 W 8TH ST, 67156  
 221-3350  
 39 M 1902 64 IM  
 WHITE, R BURNLEY, 117 W 9TH, 67156  
 221-2950  
 24 M 1902 52 FP  
 WINBLAD, JAMES N, 1211 E 5TH ST, 67156  
 221-6100  
 27 M 1902 53 GS

**YATES CENTER—316**  
*(Allen County Society)*

ATKIN, JOHN D, 1004 E MADISON, 66783  
 625-2312  
 35 M 3901 61 FP

**OUT OF STATE**

ALLEN, MARK LYNN, 3720 WYOMING SUITE 3  
 KANSAS CITY MO 64111  
 BACON, ARTHUR H, 38 RUBBER TREE DR  
 LAKE WORTH FL 33643  
 BARE, LAWRENCE E, PO BOX 217  
 COLORADO SPRING CO 80840  
 BARNES, MARIAN, 2040 W AVE J-13 APT 27  
 LANCASTER CA 93534  
 BASER, ALI N, USAF MED CENTER  
 BILCXI MS 39534  
 BEHRHORST, CARROLL D, MEDICO Y CIRUJANO  
 GUATEMALA  
 BELL, MARGARET E, FRANKFURT YOUTH HLTH CTR  
 APO NEW YORK NY 09710  
 BELT, ROBERT JULIAN, 6724 TRCST  
 KANSAS CITY MO 64131  
 BLACK, WILLIAM L, USA MEDDAC NEUENBERG GERM  
 APO NY NY 09696  
 BOUDET, ROBERT A, V A HOSP  
 KANSAS CITY MO 64128  
 BRAUN, WILLIAM T, 163 BRANDY HILLS DR  
 PORT ORANGE FL 32019  
 BROOKER, ROBERT M, 101 OCEAND AVE #19  
 SANTA BARBARA CA 93109  
 BROTHERS, MARY ELIZABETH, 2727 MAIN  
 KANSAS CITY MO 64108  
 BROWN, ALEX L, 2340 GRECIAN WAY #2  
 CLEARWATER FL 33515  
 BROWN-SANDERS, CAROLINE, 617 A WILLOW DR  
 LEES SUMMIT MO 64063  
 BUDETTI, JOSEPH A, 330 NEW YORK AVE  
 HOLLYWOOD FL 33020  
 CABLE, THOMAS M, RTE #2 BOX 259  
 WINCHESTER KY 40391  
 CALKINS, W GRAHAM, V A HCSP  
 KANSAS CITY MO 64128  
 CARNEY, MYRTLE S, 4308 HELDRING DR E  
 FT WORTH TX 76109  
 CHOY, JAMES K L, 17826 - 130TH AVE  
 SUN CITY AZ 85375  
 CLARK, ORVILLE R, 911 EDEN ISLE DR NE  
 ST PETERSBURG FL 33704  
 CLARK, RAY A, 2410 2ND AVE  
 LAKE CHAS LA 70601  
 CLARK, ROBERT THOMAS, APARTADC 563  
 GUATEMALA CEN A \*  
 CLYDE, HARRIE R, 2034 E SOUTHERN AVE  
 TEMPE AZ 85282  
 CRONEMEYER, RICHARD L, 444 GLADSTONE BLVD  
 KANSAS CITY MO 66124  
 CROUCH, CAPT STEVEN W, USAF HOSPITAL DOVER  
 DOVER DE 19901  
 DAVENPORT, S SCOTT, 403 WOODLAND HILLS  
 TUSCALOOSA AL 35405  
 DAVIS JR, JAMES W, V A HOSP  
 KANSAS CITY MO 64128  
 DIEHL, ANTONI M, 618 MEDICAL PLAZA  
 KANSAS CITY MO 64111  
 ESTES, NORMAN C, WISHARD MEM HOSP  
 INDIANAPOLIS IN 46202  
 \*EVANS, RICHARD W, 3902 N 61ST  
 MILWAUKEE WI 53216  
 FESTOFF, BARRY W, VA HOSPITAL  
 KANSAS CITY MO 64128  
 FINK, ABRAHAM A, 305 JACARANDA DR  
 PLANTATION FL 33324  
 FIRKINS, RICHARD T, V A MEDICAL CENTER  
 DES MOINES IA 50310  
 GAINES, LARRY STRAWDER, 164 WOODLAND SHORES RD  
 CHARLESTON SC 29412  
 GENCH, RAYMOND L, 25870 ELINOR PLACE  
 CARMEL CA 93923



GIAP, HAI PHUC, V A MED CTR PSY SERVICE  
 KNOXVILLE IA 50138  
 GILL, GEORGE L, PO BOX 255  
 LAMPE MO 65681  
 GODFREY, ROBERT G, VA HCSP  
 KANSAS CITY MO 64128  
 GRADINGER, BILLENS C, 9815 LINDGREN AVE  
 SUN CITY AZ 67056  
 GRAYSON, ROY D, 6303 INO SCHOOL NE #602  
 ALBUQUERQUE NM 87110  
 HAMM, CRVAL L, MEMORIAL CHRISTN HCSP  
 PAKISTAN  
 HAMMEL, GEORGE W, 51 NANTUCKET DR  
 BELLA VISTA AR 72712  
 HARD, BENJAMIN F, MOBAY CHEMICAL CORP  
 KANSAS CITY MO 64120  
 HARTLEY, FOUNT K, UNIVERSITY OF FLORIDA  
 GAINESVILLE FL 32610  
 HILL, JAMES E, 103 MAYFAIR DR  
 BELLA VISTA AR 72712  
 HILL, JOHN J, 7460 DELMONICO BLVD  
 COLORADO SPRING CO 80918  
 HOLCOMB, DONALD G, 1526 EDMONT  
 LOS ANGELES CA 90027  
 HOYLE, WINTHROP E, PC BOX 3823  
 ESTES PARK CO 80517  
 HUAMAN, ANTONIC M, MCDA HOSPITAL  
 \* \*  
 HUSEMAN, RICHARD ALLAN, 2700 HOSPITAL DR STE 240  
 NORTH KANS CITY MO 64116  
 HYLWA, THEODORE M, 2777 LONG BEACH STE 100  
 LONG BEACH CA 90806  
 ISERN, MERRILL, 1405 W 50TH TERR  
 KANSAS CITY MO 64112  
 JACKMAN, GLENN H, PC BOX 997  
 ESTES PARK CO 80517  
 JACKSON, ROGER PAUL, 2700 HOSPITAL DR STE 340  
 N KANSAS CITY MO 64116  
 JOHNS JR, LEO E, VETERANS MED CENTER  
 KANSAS CITY MO 64128  
 JOHNSON, FREDERICK E, C/C MARY K BLOTT  
 KANSAS CITY MO 64112  
 KINPCRTS JR, EDWARD B, 2400 PERSHING RD STE 561  
 KANSAS CITY MO 64108  
 KRUPKA, MILES ALBERT, 3012 MAPLE AVE  
 BERWYN IL 60401  
 LEE, SANG OUG, 320 S 12TH BOX 1198  
 FT DOUGE IA 50501  
 LEGER, LEE H, 775 ENTRADA DR  
 FT MYERS FL 33907  
 LEWIS JR, H DANIEL, VETERANS MEDICAL CENTER  
 KANSAS CITY MO 64128  
 LUETJE, CHARLES MARION, 2928 MAIN  
 KANSAS CITY MO 64108  
 MCALINNEY, PATRICK G, 2520 GRAND AVE APT 407  
 KANSAS CITY MO 64108  
 MILLER, HERBERT C, PC BOX 176  
 NORFORD CT 06472  
 MILLER, MONTE B, 1332-2 VANDENBERG DR  
 ANDREWS AFB MO 20335  
 MURRAY, W LEE, 4601 W 109TH  
 SHAWNEE MISSION JO 66211  
 NASH, NEWMAN CURTIS, 7325 E MONTEBELLO  
 SCOTTSDALE AZ 85253  
 NEWTON, CHARLES R, 444 N FULHAM RD  
 VISALIA CA 93277  
 NIENSTEDT, JOHN F, 10502 LOMA BLANCA  
 SUN CITY AZ 85351  
 O'GRADY, JOSEPH A, ROUTE 1  
 GARFIELD AR 72732  
 CWENS, RICHARD L, 2600 COMMERCE TOWER  
 KANSAS CITY MO 64105  
 PAYNE, J RALPH, 4460 ROCKHILL TERRACE  
 KANSAS CITY MO 64110  
 PETERSSEN, D'RUTH S, RR 1 BOX 200A  
 RIDGEVILLE IN 47380  
 POKORNY, CHARLES, 17818 PALO VERDE DR  
 SUN CITY AZ 85373  
 POONAWALA, HUSENI E, 4400 BROADWAY SUITE 202  
 KANSAS CITY MO 64111  
 POWERS, HAROLD W, 10633 WELK DRIVE  
 SUN CITY AZ 85351  
 PRUITT, JOHN C, 3100 N ACADEMY PKWY I 207  
 COLORADO SPRING CO 80907  
 QUINONES, ELADIO A, 4903 STOLLS AVE  
 TAMPA FL 33615  
 RAHMAN, HAFIZ M A, HILLSBORO CO HCSP  
 TAMPA FL 33980  
 REDING, DOUGLAS J, 4206 GENESSEE  
 KANSAS CITY MO 64111  
 REED, JAMES S, U S EMBASSY URUGUAY  
 APO MIAMI FL 34035  
 RENON, HUMBERTO M, TAWAN HCSP BOX 15258  
 AL AIN \*  
 ROSE, DONALD L, 16 EATON CIRCLE  
 BELLA VISTA AR 72712  
 ROSSITTO, ANTHONY F, 2255 BAY  
 SAN FRANCISCO CA 94123  
 SCALES, WILLIAM M, TWIN ISLAND ESTATES  
 BLUE EYE MO 65611  
 SCHAFER, CLARENCE K, 139 SCENIC STREET  
 SANTA CRUZ CA 95060  
 SINGER, PHILIP A, V A HOSPITAL  
 KANSAS CITY MO 64128  
 SLEEPER, CAROL A, 20 E FOURTEENTH  
 KANSAS CITY MO 64142  
 STEEGMANN, A THEODORE, 1720-A PEMBERTON LANE  
 INDIANAPOLIS IN 46260  
 STILLIE, G DONALD, 7609 LOCUST  
 KANSAS CITY MO 64131  
 STOFER, BERT E, 1250 SOLAR HTS DR  
 PRESCOTT AZ 86301  
 STOKES, ROBERT LEE, 924 W 34TH  
 KANSAS CITY MO 64111  
 TREES, DONALD P, 12732 BASSETT  
 HOLLYWOOD CA 91605  
 VERGEL, JAIME A, 227 NW 56TH AVE  
 MIAMI FL 33126  
 WALKER, NELLIE G, 501 MCCRE ST #201F  
 LEES SUMMIT MO 64063  
 WALTERS, BYRON W, 9539 CCOUNTRY CLUB DR  
 SUN CITY AZ 85373  
 WELLS, MAX MICHAEL, 5909 HARRY HINES BLVD  
 DALLAS TX 75235  
 WESBROCK, CLYDE W, BOX 5000  
 BELLEVILLE IL 62225  
 WESCHIE, W CLARKE, 90 PARK AVE  
 NEW YORK NY 10016  
 WIEGMANN, THOMAS B, VETERANS MED CENTER  
 KANSAS CITY MO 64128  
 WILCHINS, LAWRENCE J, 3015 S TORREY PINES  
 LAS VEGAS NV 89102  
 WOLKOFF, CDR A STARK, PATROL SQUADRON SIX  
 SAN FRANCISCO CA 96601  
 WOOLCOTT JR, PHILIP, UNIVERSITY OF ILLINOIS  
 CHICAGO IL 60612  
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Please allow approximately 2-3 weeks for delivery.



# Continuing Medical Education

The 1976 Kansas Legislature enacted a law requiring continuing medical education as a requisite to relicensure in Kansas. HB-2723 provides that, "From and after July 1, 1978, the Kansas State Board of Healing Arts shall require every licensee to submit with the renewal application evidence of satisfactory completion of a program of continuing education required by the Board." Physicians not in the active practice of the healing arts in the State of Kansas may be exempted from the continuing medical education requirements for relicensure by signing an affidavit furnished by the Kansas State Board of Healing Arts. The following is a description of the CME requirements established by the Board, and an explanation of how to comply with the requirements.

As a basic requirement, the Board adopted the CME requirements of the Kansas Medical Society, which is the attainment of the American Medical Association "Physician's Recognition Award." The basic criteria for the PRA is 150 hours of educational experience over a three-year period. The educational activities are described in six separate categories. Below is a brief description of each category and the maximum number of hours that can be obtained in each category:

	<i>Credit Hours Limit</i>
Category 1 — CME activities with accredited sponsorship (60 hours required)	no limit
Category 2 — CME activities with non-accredited sponsorship	45 hrs.
Category 3 — Medical teaching	45 hrs.
Category 4 — Papers, publications, books, exhibits	40 hrs.
Category 5 — Non-supervised individual CME activities	45 hrs.
Category 6 — Other meritorious learning experiences	45 hrs.

Completion of AMA-PRA satisfies the requirement established by the Board. Because relicensure is on a yearly basis, and the PRA is on a three-year basis, a physician need only have a valid PRA in effect to be in compliance with the requirements of the Board.

Additionally, completion of the CME certification programs of any of the following organizations also constitutes compliance with the requirements of the Board:

- American Academy of Dermatology
- American Association of Neurological Surgeons
- American College of Emergency Physicians
- American College of Radiology
- American Society of Colon and Rectal Surgeons
- American Academy of Family Physicians
- American College of Obstetricians and Gynecologists
- College of American Pathologists/American Society of Clinical Pathologists
- American Psychiatric Association

Any other specialty organization CME certification programs subsequently recognized by the AMA.

If you satisfy the requirements of any of the above organizations, you need *not* apply for the "Physician's Recognition Award." Each specialty organization will notify the Kansas Medical Society of your certification, and the Kansas Medical Society will in turn notify the Board that you have satisfactorily completed your requirements.

If you do not qualify for the specialty organization programs listed above, you must apply directly to the AMA for the "Physician's Recognition Award." Upon receipt of the award, the AMA will notify the Kansas Medical Society that you have completed the requirement.

Questions concerning CME requirement can be directed to the Board or the Kansas Medical Society. The addresses of each are as follows:

The Kansas State Board of Healing Arts  
503 Kansas Avenue  
Topeka, KS 66603  
Telephone: (913) 296-7413

The Kansas Medical Society  
1300 Topeka Boulevard  
Topeka, KS 66612  
Telephone: (913) 235-2383

Each individual physician is responsible for recording his own hours of attendance at postgraduate courses. The credit hours should be recorded on the AMA Physician's Recognition Award application form when 150 hours are accumulated. The application form should then be mailed directly to the AMA, 535 North Dearborn, Chicago, IL 60610.



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each tablet contains quinine sulfate 260 mg

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(quinine sulfate tablets)

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**BRIEF SUMMARY**

#### INDICATIONS AND USAGE

For the prevention and treatment of nocturnal recumbency leg muscle cramps.

#### CONTRAINDICATIONS

Quinamm may cause fetal harm when administered to a pregnant woman. Congenital malformations in the human have been reported with the use of quinine, primarily with large doses (up to 30 g.) for attempted abortion. In about half of these reports the malformation was deafness related to auditory nerve hypoplasia. Among the other abnormalities reported were limb anomalies, visceral defects, and visual changes. In animal tests, teratogenic effects were found in rabbits and guinea pigs and were absent in mice, rats, dogs, and monkeys. Quinamm is contraindicated in women who are or may become pregnant. If this drug is used during pregnancy, or if the patient becomes pregnant while taking this drug, the patient should be apprised of the potential hazard to the fetus. Because of the quinine content, Quinamm is contraindicated in patients with known quinine hypersensitivity and in patients with glucose-6-phosphate dehydrogenase (G-6-PD) deficiency. Since thrombocytopenic purpura may follow the administration of quinine in highly sensitive patients, a history of this occurrence associated with previous quinine ingestion contraindicates its further use. Recovery usually occurs following withdrawal of the medication and appropriate therapy.

This drug should not be used in patients with tinnitus or optic neuritis or in patients with a history of blackwater fever.

#### WARNINGS

Repeated doses or overdosage of quinine in some individuals may precipitate a cluster of symptoms referred to as cinchonism. Such symptoms, in the mildest form, include ringing in the ears, headache, nausea, and slightly disturbed vision; however, when medication is continued or after large single doses, symptoms also involve the gastrointestinal tract, the nervous and cardiovascular systems, and the skin.

Hemolysis (with the potential for hemolytic anemia) has been associated with a G-6-PD deficiency in patients taking quinine. Quinamm should be stopped immediately if evidence of hemolysis appears.

If symptoms occur, drug should be discontinued and supportive measures instituted. In case of overdosage, see OVERDOSAGE section of prescribing information.

#### PRECAUTIONS

##### General

Quinamm should be discontinued if there is any evidence of hypersensitivity. (See CONTRAINDICATIONS.) Cutaneous flushing, pruritus, skin rashes, fever, gastric distress, dyspnea, ringing in the ears, and visual impairment are the usual expressions of hypersensitivity, particularly if only small doses of quinine

have been taken. Extreme flushing of the skin accompanied by intense, generalized pruritus is the most common form. Hemoglobinuria and asthma from quinine are rare types of idiosyncrasy.

In patients with atrial fibrillation, the administration of quinine requires the same precautions as those for quinidine. (See Drug Interactions.)

#### Drug Interactions

Increased plasma levels of digoxin and digitoxin have been demonstrated in individuals after concomitant quinidine administration. Because of possible similar effects from use of quinine, it is recommended that plasma levels for digoxin and digitoxin be determined for those individuals taking these drugs and Quinamm concomitantly.

Concurrent use of aluminum-containing antacids may delay or decrease absorption of quinine.

Cinchona alkaloids, including quinine, have the potential to depress the hepatic enzyme system that synthesizes the vitamin K-dependent factors. The resulting hypoprothrombinemic effect may enhance the action of warfarin and other oral anticoagulants.

The effects of neuromuscular blocking agents (particularly pancuronium, succinylcholine, and tubocurarine) may be potentiated with quinine, and result in respiratory difficulties.

Urinary alkalinizers (such as acetazolamide and sodium bicarbonate) may increase quinine blood levels with potential for toxicity.

#### Drug Laboratory Interactions

Quinine may produce an elevated value for urinary 17-ketogenic steroids when the Zimmerman method is used.

#### Carcinogenesis, Mutagenesis, Impairment of Fertility

A study of quinine sulfate administered in drinking water (0.1%) to rats for periods up to 20 months showed no evidence of neoplastic changes.

Mutation studies of quinine (dihydrochloride) in male and female mice gave negative results by the micronucleus test. Intraperitoneal injections (0.5 mM/kg) were given twice, 24 hours apart. Direct *Salmonella typhimurium* tests were negative, when mammalian liver homogenate was added, positive results were found.

No information relating to the effect of quinine upon fertility in animal or in man has been found.

#### Pregnancy

Category X. See CONTRAINDICATIONS.

#### Nonteratogenic Effects

Because quinine crosses the placenta in humans, the potential for fetal effects is present. Stillbirths in mothers taking quinine have been reported in which no obvious cause for the fetal deaths was shown. Quinine in toxic amounts has been associated with abortion. Whether this action is always due to direct effect on the uterus is questionable.

#### Nursing Mothers

Caution should be exercised when Quinamm is given to nursing women because quinine is excreted in breast milk (in small amounts).

#### ADVERSE REACTIONS

The following adverse reactions have been reported with Quinamm in therapeutic or excessive dosage. (Individual or multiple symptoms may represent cinchonism or hypersensitivity.)

**Hematologic:** acute hemolysis, thrombocytopenic purpura, agranulocytosis, hypoprothrombinemia.

**CNS:** visual disturbances, including blurred vision with scotomata, photophobia, diplopia, diminished visual fields, and disturbed color vision; tinnitus, deafness, and vertigo; headache, nausea, vomiting, fever, apprehension, restlessness, confusion, and syncope.

**Dermatologic/allergic:** cutaneous rashes (urticarial, the most frequent type of allergic reaction, papular or scarlatiniform), pruritus, flushing of the skin, sweating, occasional edema of the face.

**Respiratory:** asthmatic symptoms.

**Cardiovascular:** anginal symptoms.

**Gastrointestinal:** nausea and vomiting (may be CNS-related), epigastric pain.

#### DRUG ABUSE AND DEPENDENCE

Tolerance, abuse, or dependence with Quinamm has not been reported.

#### OVERDOSAGE

See prescribing information for a discussion on symptoms and treatment of overdose.

#### DOSSAGE AND ADMINISTRATION

1 tablet upon retiring. If needed, 2 tablets may be taken nightly—1 following the evening meal and 1 upon retiring.

After several consecutive nights in which recumbency leg cramps do not occur, Quinamm may be discontinued in order to determine whether continued therapy is needed.

Product Information as of October, 1980

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Although weight loss achieved in a weight control program varies from patient to patient, this simulated sequence of a professional model illustrates dramatically the benefits of a successful weight loss program.



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prescribe

# Tenuate<sup>\*</sup> Dospan<sup>\*</sup>

(diethylpropion hydrochloride USP)

75 mg controlled-release tablets

the #1 prescribed anorectic

## An effective short-term adjunct in an indicated weight loss program

Overweight patients in certain diagnostic categories often require strict obesity control. Diethylpropion hydrochloride has been reported useful in obese patients with certain complications. While it is not suggested that Tenuate in any way reduces these complications in the overweight, it may have a useful place as a short-term adjunct in a prescribed dietary regimen. Tenuate should not be administered to patients with severe hypertension; see additional Precautions and Adverse Reactions on this page.

## In uncomplicated obesity

Many patients, on the other hand, present with excess fat but no disease. While this condition is often termed uncomplicated obesity, complications of both a social and a psychologic nature may be distressingly real for the patients. In these cases, a short-term regimen of Tenuate can help reinforce your dietary counsel during the important early weeks of an indicated weight loss program.

## Clinical effectiveness

The anorectic effectiveness of diethylpropion hydrochloride is well documented. No less than 18 separate double-blind, placebo-controlled studies attest to its usefulness in daily practice.<sup>1</sup> And the unique chemistry of Tenuate provides "...anorectic potency with minimal overt central nervous system or cardiovascular stimulation."<sup>2</sup> Compared with the amphetamines, diethylpropion has minimal potential for abuse.

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**References:** 1. Citations available on request from Merrell Dow Pharmaceuticals Inc., Cincinnati, Ohio 45215. 2. Hoekenga M T et al: A comprehensive review of diethylpropion hydrochloride. In Central Mechanisms of Anorectic Drugs, S Garattini and R Samanin, Ed, New York. Raven Press, 1978, pp. 391-404.

Tenuate<sup>®</sup>   
(diethylpropion hydrochloride USP)

Tenuate Dospan<sup>®</sup>   
(diethylpropion hydrochloride USP)  
controlled-release

AVAILABLE ONLY ON PRESCRIPTION

### Brief Summary

**INDICATION:** Tenuate and Tenuate Dospan are indicated in the management of exogenous obesity as a short-term adjunct (a few weeks) in a regimen of weight reduction based on caloric restriction. The limited usefulness of agents of this class should be measured against possible risk factors inherent in their use such as those described below.

**CONTRAINDICATIONS:** Advanced arteriosclerosis, hyperthyroidism, known hypersensitivity, or idiosyncrasy to the sympathomimetic amines, glaucoma. Agitated states. Patients with a history of drug abuse. Ouring or within 14 days following the administration of monoamine oxidase inhibitors, (hypertensive crises may result).

**WARNINGS:** If tolerance develops, the recommended dose should not be exceeded in an attempt to increase the effect; rather, the drug should be discontinued. Tenuate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle; the patient should therefore be cautioned accordingly. When central nervous system active agents are used, consideration must always be given to the possibility of adverse interactions with alcohol. **Drug Dependence:** Tenuate has some chemical and pharmacologic similarities to the amphetamines and other related stimulant drugs that have been extensively abused. There have been reports of subjects becoming psychologically dependent on diethylpropion. The possibility of abuse should be kept in mind when evaluating the desirability of including a drug as part of a weight reduction program. Abuse of amphetamines and related drugs may be associated with varying degrees of psychologic dependence and social dysfunction which, in the case of certain drugs, may be severe. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG. Manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxications is psychosis, often clinically indistinguishable from schizophrenia. **Use in Pregnancy:** Although rat and human reproductive studies have not indicated adverse effects, the use of Tenuate by women who are pregnant or may become pregnant requires that the potential benefits be weighed against the potential risks. **Use in Children:** Tenuate is not recommended for use in children under 12 years of age.

**PRECAUTIONS:** Caution is to be exercised in prescribing Tenuate for patients with hypertension or with symptomatic cardiovascular disease, including arrhythmias. Tenuate should not be administered to patients with severe hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of Tenuate and the concomitant dietary regimen. Tenuate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdosage. Reports suggest that Tenuate may increase convulsions in some epileptics. Therefore, epileptics receiving Tenuate should be carefully monitored. Titration of dose or discontinuance of Tenuate may be necessary.

**ADVERSE REACTIONS:** **Cardiovascular:** Palpitation, tachycardia, elevation of blood pressure, precordial pain, arrhythmia. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride. **Central Nervous System:** Overstimulation, nervousness, restlessness, dizziness, jitteriness, insomnia, anxiety, euphoria, depression, dysphoria, tremor, dyskinesia, mydriasis, drowsiness, malaise, headache; rarely psychotic episodes at recommended doses. In a few epileptics an increase in convulsive episodes has been reported. **Gastrointestinal:** Dryness of the mouth, unpleasant taste, nausea, vomiting, abdominal discomfort, diarrhea, constipation, other gastrointestinal disturbances. **Allergic:** Urticaria, rash, ecchymosis, erythema. **Endocrine:** Impotence, changes in libido, gynecomastia, menstrual upset. **Hematopoietic System:** Bone marrow depression, agranulocytosis, leukopenia. **Miscellaneous:** A variety of miscellaneous adverse reactions has been reported by physicians. These include complaints such as dyspnea, hair loss, muscle pain, dysuria, increased sweating, and polyuria.

**DOSEAGE AND ADMINISTRATION:** Tenuate (diethylpropion hydrochloride): One 25 mg. tablet three times daily, one hour before meals, and in mid-evening if desired to overcome night hunger. Tenuate Dospan (diethylpropion hydrochloride) controlled-release: One 75 mg. tablet daily, swallowed whole, in mid-morning. Tenuate is not recommended for use in children under 12 years of age.

**OVERDOSAGE:** Manifestations of acute overdosage include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states. Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Overdose of pharmacologically similar compounds has resulted in fatal poisoning, usually terminating in convulsions and coma. Management of acute Tenuate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Intravenous phentolamine (Regitine<sup>®</sup>) has been suggested on pharmacologic grounds for possible acute, severe hypertension, if this complicates Tenuate overdosage.

Product Information as of June, 1980

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**WARNING:** Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as a failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

**PRECAUTIONS:** As with other antibacterial preparations, prolonged use may result in overgrowth of non-susceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

**ADVERSE REACTIONS:** Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.



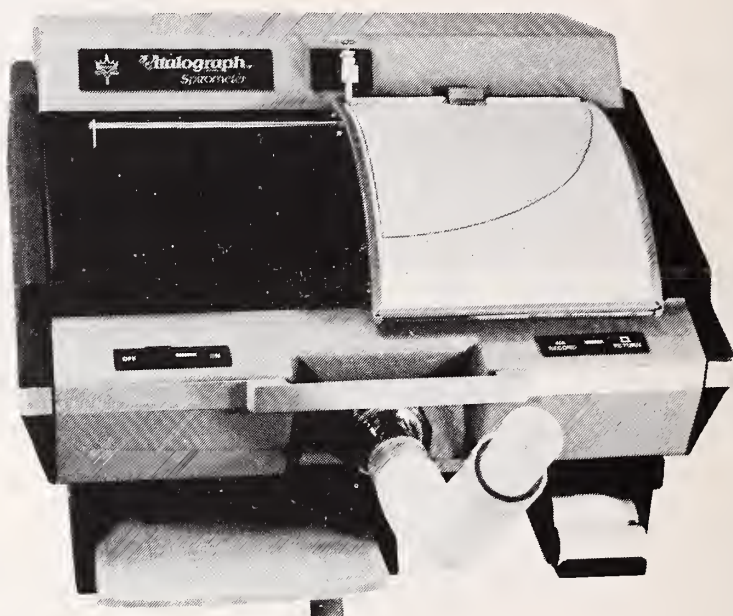
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#### EQUAGESIC—Abbreviated Summary

**\*INDICATIONS:** Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows:

"Possibly" effective, for the treatment of pain accompanied by tension and/or anxiety in patients with musculoskeletal disease or tension headache.

Final classification of the less-than-effective indications requires further investigation.

The effectiveness of Equagesic in long-term use, i.e. more than four months, has not been assessed by systematic clinical studies. The physician should periodically reassess usefulness of the drug for the individual patient.

**CONTRAINDICATIONS:** Equagesic should not be given to individuals with a history of sensitivity or severe intolerance to aspirin, meprobamate, or ethoheptazine citrate.

**WARNINGS:** Careful supervision of dose and amounts prescribed for patients is advised, especially with those patients with known propensity for taking excessive quantities of drugs. Excessive and prolonged use in susceptible persons, e.g., alcoholics, former addicts, and other severe psychoneurotics, has been reported to result in dependence on or habituation to the drug. Where excessive dosage has continued for weeks or months, dosage should be reduced gradually rather than abruptly stopped, since withdrawal of a "crutch" may precipitate withdrawal reaction of greater proportions than that for which the drug was originally prescribed. Abrupt discontinuance of doses in excess of the recommended dose has resulted in some cases in the occurrence of epileptiform seizures.

Special care should be taken to warn patients taking meprobamate that tolerance to alcohol may be lowered with resultant slowing of reaction time and impairment of judgment and coordination.

**USAGE IN PREGNANCY AND LACTATION:** An increased risk of congenital malformations associated with the use

of minor tranquilizers (meprobamate, chlordiazepoxide, and diazepam) during the first trimester of pregnancy has been suggested in several studies. Because use of these drugs is rarely a matter of urgency, their use during this period should almost always be avoided. The possibility that a woman of child-bearing potential may be pregnant at the time of institution of therapy should be considered. Patients should be advised that if they become pregnant during therapy or intend to become pregnant they should communicate with their physicians about the desirability of discontinuing the drug. Meprobamate passes the placental barrier. It is present both in umbilical-cord blood and in near maternal plasma levels and in breast milk of lactating mothers at concentrations two to four times that of maternal plasma. When use of meprobamate is contemplated in breast-feeding patients, the drug's higher concentration in breast milk as compared to maternal plasma levels should be considered.

Preparations containing aspirin should be kept out of the reach of children. Equagesic is not recommended for patients 12 years of age and under.

**PRECAUTIONS:** Should drowsiness, ataxia, or visual disturbance occur, the dose should be reduced. If symptoms continue, patients should not operate a motor vehicle or any dangerous machinery. Suicidal attempts with meprobamate have resulted in coma, shock, vasomotor and respiratory collapse, and anuria. Very few suicidal attempts were fatal, although some patients ingested very large amounts of the drug (20 to 40 gm). These doses are much greater than recommended. The drug should be given cautiously, and in small amounts, to patients who have suicidal tendencies. In cases where excessive doses have been taken, sleep ensues rapidly and blood pressure, pulse, and respiratory rates are reduced to basal levels. Hyperventilation has been reported occasionally. Any drug remaining in the stomach should be removed and symptomatic treatment given. Should respiration become very shallow and slow, CNS stimulants, e.g., caffeine, Metrazol, or amphet-

mine, may be cautiously administered. If severe hypotension develops, pressor amines should be used parenterally to restore blood pressure to normal levels.

**ADVERSE REACTIONS:** A small percentage of patients may experience nausea with or without vomiting and epigastric distress. Dizziness occurs rarely when meprobamate and ethoheptazine citrate with aspirin is administered in recommended dosage. The meprobamate may cause drowsiness but, as a rule, this disappears as therapy is continued. Should drowsiness persist and be associated with ataxia, this symptom can usually be controlled by decreasing the dose, but occasionally it may be desirable to administer central stimulants such as amphetamine or mephentermine sulfate concomitantly to control drowsiness.

A clearly related side effect to the administration of meprobamate is the rare occurrence of allergic or idiosyncratic reactions. This response develops, as a rule, in patients who have had only 1-4 doses of meprobamate and have not had a previous contact with the drug. Previous history of allergy may or may not be related to the incidence of reactions.

Mild reactions are characterized by an itchy urticarial or erythematous, maculopapular rash which may be generalized or confined to the groin. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema, and fever have also been reported.

More severe cases, observed only very rarely, may also have other allergic responses, including fever, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case), and hyperthermia. Treatment should be symptomatic such as administration of epinephrine, antihistamine, and possibly hydrocortisone. Meprobamate should be stopped, and re-institution of therapy should not be attempted.

Rare cases have been reported where patients receiving meprobamate suffered from aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis, and hemolytic anemia. In nearly every instance reported, other toxic agents known to have caused these conditions have been associated with meprobamate. A few cases of leukopenia during

continuous administration of meprobamate are reported; most of these returned to normal without discontinuation of the drug.

Impairment of accommodation and visual acuity has been reported rarely.

**OVERDOSE:** Two instances of accidental or intentional significant overdose with ethoheptazine citrate combined with aspirin have been reported. These were accompanied by symptoms of CNS depression, including drowsiness and light-headedness, with uneventful recovery. However, on the basis of pharmacological data, it may be anticipated that CNS stimulation could occur. Other anticipated symptoms would include nausea and vomiting. Appropriate therapy of signs and symptoms as they appear is the only recommendation possible at this time. Overdosage with ethoheptazine combined with aspirin would probably produce the usual symptoms and signs of salicylate intoxication. Observation and treatment should include induced vomiting or gastric lavage, specific parenteral electrolyte therapy for ketoacidosis and dehydration, watching for evidence of hemorrhagic manifestations due to hypoprothrombinemia which, if it occurs, usually requires whole-blood transfusions.

**DESCRIPTION:** Each Equagesic tablet contains 150 mg meprobamate, 75 mg ethoheptazine citrate and 250 mg aspirin.

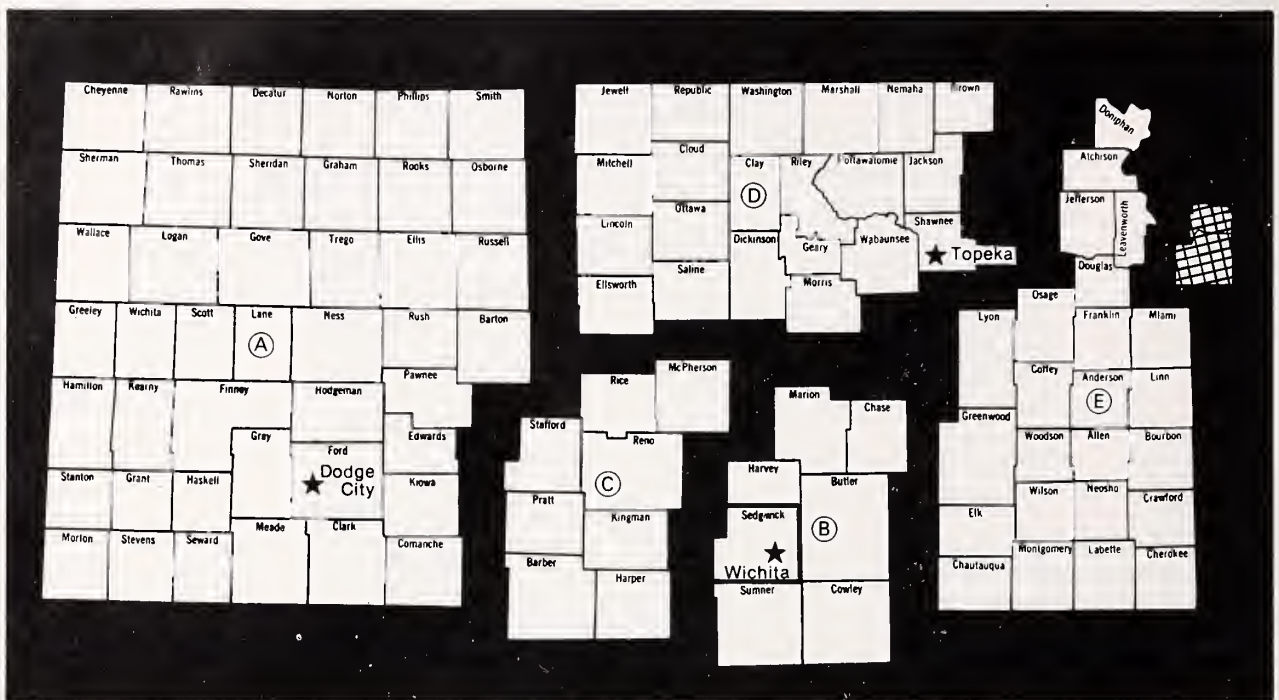
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\*This drug has been evaluated as possibly effective for this indication

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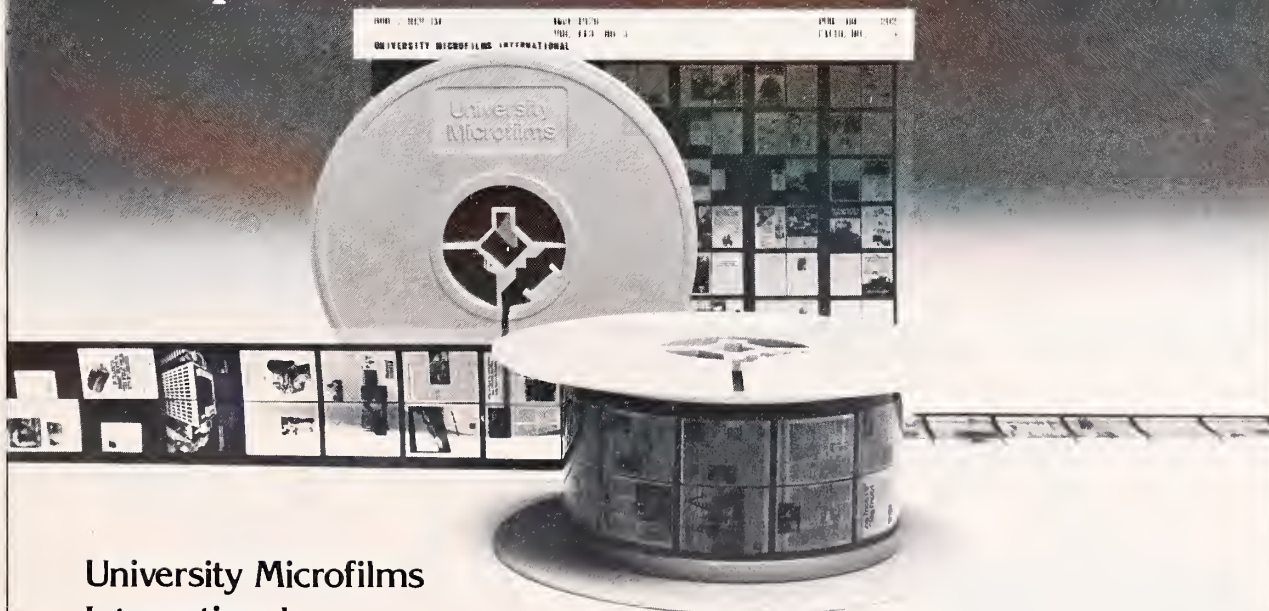
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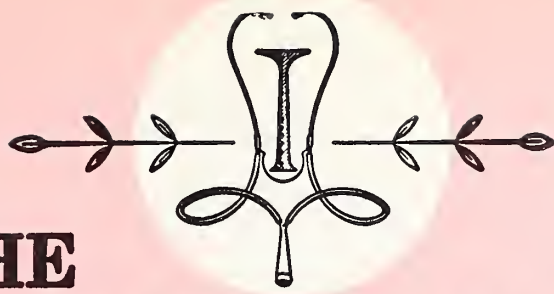


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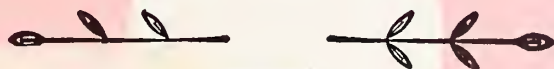
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# AMA House of Delegates

## *Summary of Actions Taken at the Annual Meeting, Chicago*

The 1981 Annual Meeting of the American Medical Association was held on June 7-11, at the Chicago Downtown Marriott Hotel. The Kansas Medical Society was officially represented by Hermann W. Hiesterman, M.D., President; the undersigned (two delegates and their alternates); and Jerry Slaughter, Executive Director. Also present from Kansas was William J. Reals, M.D., Wichita, representing the College of American Pathologists. Other Kansans present were: Drs. Z. Rex Boyd, Wichita; George E. Burket, Jr., Shawnee Mission; Jack C. Mitchell, Salina; Roger Warren and Linda Warren, Hanover.

This was the largest House in AMA's history, with 283 delegates. Five state societies received an additional delegate seat this year due to membership increases. The House postponed granting delegate seats to several additional specialty societies until further consideration of the requests. There are currently 56 national specialty societies with representation in the House.

Membership and American medicine's changing relationship with the Federal Government were the major issues at this meeting. In a session seemingly bereft of real medical controversy, delegates from throughout the country had other ideas as the five-day session progressed.

### **AMA Reorganization**

A major report of the Board of trustees calling for a reorganization of AMA structure and staff and a \$35 annual dues increase received the most attention. Most of the Board's proposals were approved (for a complete rundown of these proposals, please refer to the June '81 issue of *The Journal*, Pg. 266). In adopting the new FUNCTIONAL PROFILE for the AMA, the House called for *representation* of the medical profession to be the number one priority for the Association. Other primary functions are: providing information, both scientific and socioeconomic; establishing and maintaining standards of conduct and performance; sharing with other organizations the maintenance and implementation of educational standards.

The delegates voted to increase regular AMA dues to \$285 in 1982. The House was told to expect similar modest increases in each of the next few years. Also approved was a proposal to set dues for

military personnel at two-thirds the regular level. Student and resident member dues remain the same, \$15 and \$35 respectively. A plan to assess members of 70 years of age 10 per cent of dues was defeated, and these senior members will remain dues exempt. In recognition of the importance for the young physicians to join organized medicine, the House adopted some dues incentives. New physicians in their first year of practice now pay 50 per cent of the regular dues, and the House voted to set the dues for their second year of practice at 75 per cent of regular dues.

### **Direct Membership**

This was a hotly debated topic. After two days of parliamentary maneuvering, the Bylaws were changed to establish a direct AMA membership option, whereby the AMA will put its first emphasis on recruiting members directly, in cooperation with state medical societies. Members thus recruited will be counted toward determining the number of delegates from each state society. The delegates were told such action was imperative because, although AMA membership has been increasing, there are still 241,000 physicians in the nation who do not belong.

The direct membership solicitation will work as follows. The AMA will bill all non-member physicians and medical students after the April 30 delinquency date each year. Lists of those physicians who apply for AMA direct membership will be sent for review to state medical associations before processing is completed. All objections to applicants for such membership will be referred to the Judicial Council for prompt disposition. Accepted physicians and students will be urged to join state and county societies. The direct membership program will be reviewed and reappraised after three years.

### **Competition Legislation**

The House adopted a comprehensive report of the Board of Trustees pertaining to "pro-competition" national health insurance proposals now under consideration by the Congress. The Board, with concurrence from the Council on Legislation and Council on Medical Service, expressed some serious concerns with these bills and how these proposals would

*(Continued on page 417)*



# Feelings vs

*Some people feel that I am misused and overused and that I'm prescribed too often and for too many kinds of problems.*

The FACT is that approximately eight million people, or about 5 percent of the U.S. adult population, will use me during the current year. By contrast, the national health examination survey (1971-1975) found that 25 percent of the U.S. adult population experiences moderate to severe psychological distress. Additionally, studies of patient attitudes revealed that most patients have realistic views regarding the limitations of tranquilizers and a strong conservatism about their use, as evidenced by a general tendency to decrease intake over time. Finally, a six-year, large-scale, carefully conducted national survey showed that the great majority of physicians appropriately prescribe tranquilizers.

*Some people feel that patients being treated with anxiolytic drugs are "weak," can't tolerate the anxieties of normal daily living, and should be able to resolve their problems on their own without the help of medication.*

The FACT is that while most people can withstand normal, everyday anxieties, some people experience excessive and persistent levels of anxiety due to personal or clinical problems. An extensive national survey concluded that Americans who do use tranquilizers have substantial

# Facts

justification as evidenced by their high levels of anxiety. It was further noted that antianxiety drugs are not usually prescribed for trivial, transient emotional problems.

*Some people feel afraid of me because of the stories they've heard about my being harmful and having the potential to produce physical dependence.*

The FACT is that there are thousands of references in the medical literature documenting my efficacy and safety. Extensive and painstakingly thorough studies of toxicological data conclude that I am one of the safest types of psychotropic drugs available. Moreover, I do not cause physical dependence if the recommended dosage and therapeutic regimen are followed under careful physician supervision. However, I can produce dependence if patients do not follow their physicians' directions and take me for prolonged periods, at dosages that exceed the therapeutic range. Patients for whom I have been prescribed should be cautious about their use of alcohol because an additive effect may result.

*Many of the most knowledgeable people feel that I became the No. 1 prescribed medication in America because no other tranquilizer has been proven more effective. Or safer.*

The FACT is they are right.

For a brief summary of product information on Valium (diazepam/Roche) ®, please see the following page. Valium is available as 2-mg, 5-mg and 10-mg scored tablets.



# Valium® diazepam/Roche

**Before prescribing, please consult complete product information, a summary of which follows:**

**Indications:** Management of anxiety disorders, or short-term relief of symptoms of anxiety. Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic. Symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome; convulsive disorders (not for sole therapy).

The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other anti-depressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation. The clearance of Valium and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

**Dosage:** Individualize for maximum beneficial effect. **Adults.** Anxiety disorders, symptoms of anxiety, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. **Geriatric or debilitated patients:** 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) **Children:** 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

**Supplied:** Valium® (diazepam/Roche) Tablets, 2 mg, 5 mg and 10 mg—bottles of 100 and 500, Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25, and in boxes containing 10 strips of 10; Prescription Paks of 50, available in trays of 10.

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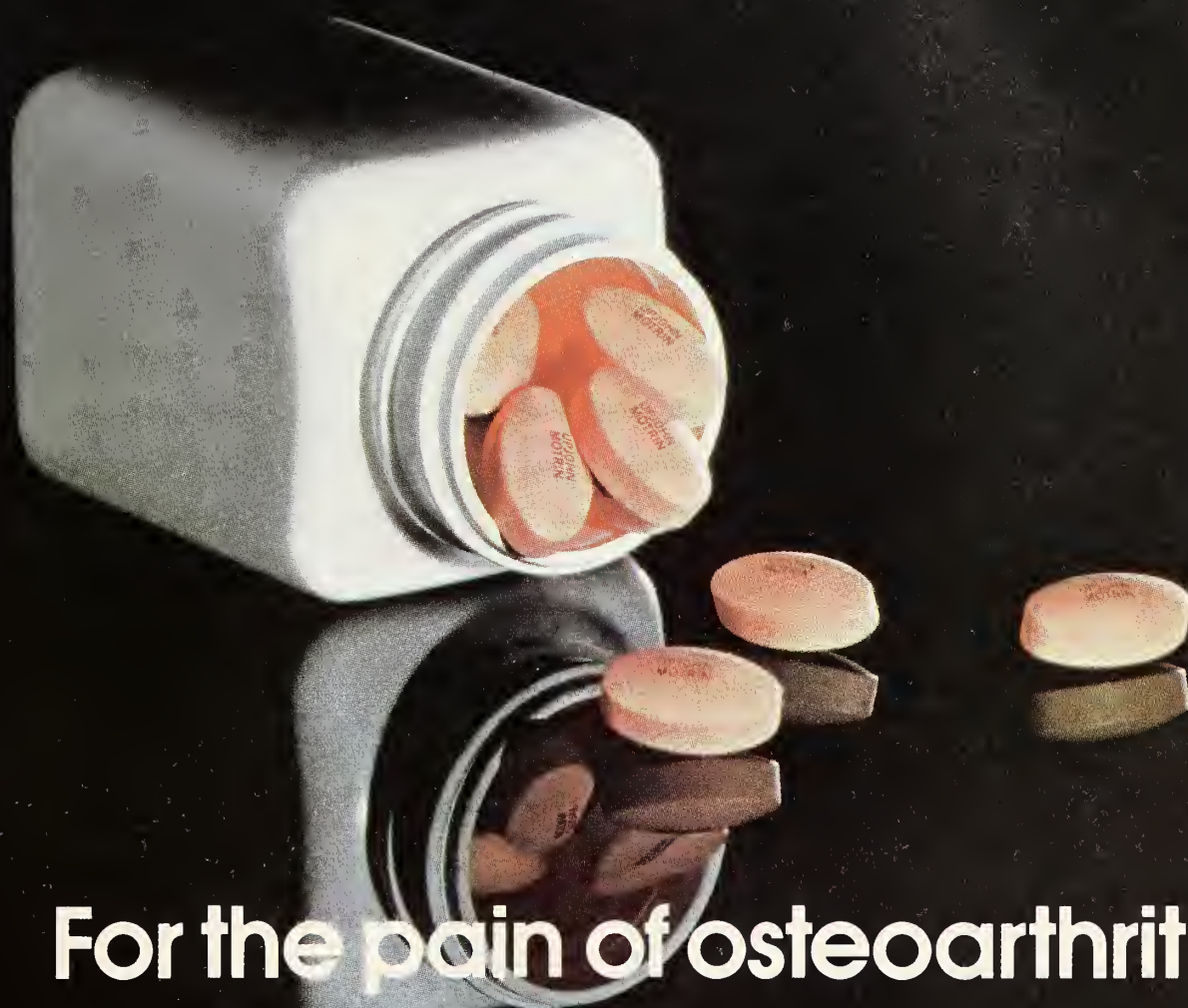
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**Motrin<sup>®</sup>**  
ibuprofen, Upjohn  
**600 mg Tablets**  
One tablet t.i.d.

Please see the following page for a brief summary of prescribing information.

**Upjohn**



## Motrin® Tablets (ibuprofen, Upjohn)

**Contraindications:** Individuals hypersensitive to it, or with the syndrome of nasal polyps, angioedema, and bronchospastic reactivity to aspirin, iodides, or other non-steroidal anti-inflammatory agents. Anaphylactoid reactions have occurred in such patients.

**Warnings:** Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Ulceration, perforation, and bleeding may end fatally. An association has not been established. *Motrin* should be given under close supervision to patients with a history of upper gastrointestinal tract disease, only after consulting ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be tried. If *Motrin* must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

Chronic studies in rats and monkeys have shown mild renal toxicity characterized by papillary edema and necrosis. Renal papillary necrosis has rarely been shown in humans treated with *Motrin*.

**Precautions:** Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If these develop, discontinue *Motrin* and the patient should have an ophthalmologic examination, including central visual fields and color vision testing. **Fluid retention and edema** have been associated with *Motrin*; use with caution in patients with a history of cardiac decompensation or hypertension. *Motrin* is excreted mainly by the kidneys. In patients with renal impairment, reduced dosage may be necessary. Prospective studies of *Motrin* safety in patients with chronic renal failure have not been done. *Motrin* can inhibit platelet aggregation and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy. Patients should report signs or symptoms of **gastrointestinal ulceration** or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema. To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged **corticosteroid therapy** should have therapy tapered slowly when *Motrin* is added. The antipyretic, anti-inflammatory activity of *Motrin* may mask inflammation and fever.

**Drug interactions.** *Aspirin*: used concomitantly may decrease *Motrin* blood levels.

*Coumarin*: bleeding has been reported in patients taking *Motrin* and coumarin.

**Pregnancy and nursing mothers:** *Motrin* should not be taken during pregnancy nor by nursing mothers.

### Adverse Reactions

The most frequent type of adverse reaction occurring with *Motrin* is gastrointestinal, of which one or more occurred in 4% to 16% of the patients.

#### **Incidence Greater Than 1% (but less than 3%)—Probable Causal Relationship**

**Gastrointestinal:** Nausea,\* epigastric pain,\* heartburn,\* diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of GI tract (bloating and flatulence); **Central Nervous System:** Dizziness,\* headache, nervousness; **Dermatologic:** Rash\* (including maculopapular type), pruritus; **Special Senses:** Tinnitus; **Metabolic/Endocrine:** Decreased appetite; **Cardiovascular:** Edema, fluid retention (generally responds promptly to drug discontinuation; see PRECAUTIONS).

#### **Incidence Less Than 1%—Probable Causal Relationship\*\***

**Gastrointestinal:** Gastric or duodenal ulcer with bleeding and/or perforation, gastrointestinal hemorrhage, melena, gastritis, hepatitis, jaundice, abnormal liver function tests; **Central Nervous System:** Depression, insomnia, confusion, emotional lability, somnolence, aseptic meningitis with fever and coma; **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme, Stevens-Johnson syndrome, alopecia; **Special Senses:** Hearing loss, amblyopia (blurred and/or diminished vision, scotomata, and/or changes in color vision) (see PRECAUTIONS); **Hematologic:** Neutropenia, agranulocytosis, aplastic anemia, hemolytic anemia (sometimes Coombs' positive), thrombocytopenia with or without purpura, eosinophilia, decreases in hemoglobin and hematocrit; **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure, palpitations; **Allergic:** Syndrome of abdominal pain, fever, chills, nausea and vomiting, anaphylaxis, bronchospasm (see CONTRAINDICATIONS); **Renal:** Acute renal failure in patients with preexisting, significantly impaired renal function, decreased creatinine clearance, polyuria, azotemia, cystitis, hematuria; **Miscellaneous:** Dry eyes and mouth, gingival ulcer, rhinitis.

#### **Incidence Less Than 1%—Causal Relationship Unknown\*\***

**Gastrointestinal:** Pancreatitis; **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities, pseudotumor cerebri; **Dermatologic:** Toxic epidermal necrolysis, photoallergic skin reactions; **Special Senses:** Conjunctivitis, diplopia, optic neuritis; **Hematologic:** Bleeding episodes (e.g., epistaxis, menorrhagia); **Metabolic/Endocrine:** Gynecomastia, hypoglycemic reaction; **Cardiovascular:** Arrhythmia (sinus tachycardia, sinus bradycardia); **Allergic:** Serum sickness, lupus erythematosus syndrome, Henoch-Schönlein vasculitis; **Renal:** Renal papillary necrosis.

\*Reactions occurring in 3% to 9% of patients treated with *Motrin*. (Those reactions occurring in less than 3% of the patients are unmarked.)

\*\*Reactions are classified under "Probable Causal Relationship" (PCR) if there has been one positive rechallenge or if three or more cases occur which might be causally related. Reactions are classified under "Causal Relationship Unknown" if seven or more events have been reported but the criteria for PCR have not been met.

**Overdosage:** In cases of acute overdosage, the stomach should be emptied. The drug is acidic and excreted in the urine, so alkaline diuresis may be beneficial.

**Dosage and Administration:** Do not exceed 2400 mg per day. If gastrointestinal complaints occur, administer with meals or milk.

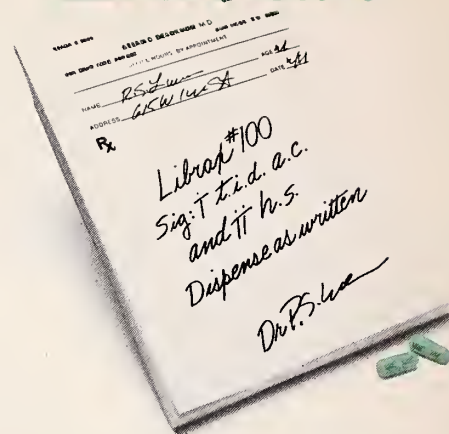
Rheumatoid arthritis and osteoarthritis, including flares of chronic disease: Suggested dosage is 300, 400, or 600 mg t.i.d. or q.i.d. Mild to moderate pain: 400 mg every 4 to 6 hours as necessary for relief of pain.

**Caution:** Federal law prohibits dispensing without prescription.

**Upjohn**

THE UPJOHN COMPANY  
Kalamazoo, Michigan 49001 USA

# Specify Librax®



Each capsule contains 5 mg chlordiazepoxide HCl and 2.5 mg clidinium Br.

Please consult complete prescribing information, a summary of which follows:

**Indications:** Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows.  
"Possibly" effective: as adjunctive therapy in the treatment of peptic ulcer and in the treatment of the irritable bowel syndrome (irritable colon, spastic colon, mucous colitis) and acute enterocolitis.  
Final classification of the less-than-effective indications requires further investigation.

**Contraindications:** Glaucoma, prostatic hypertrophy, benign bladder neck obstruction; hypersensitivity to chlordiazepoxide HCl and/or clidinium bromide.

**Warnings:** Caution patients about possible combined effects with alcohol and other CNS depressants, and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Physical and psychological dependence rarely reported on recommended doses, but use caution in administering Librium® (chlordiazepoxide HCl/Roche) to known addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions) reported following discontinuation of the drug.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy. Advise patients to discuss therapy if they intend to or do become pregnant.

As with all anticholinergics, inhibition of lactation may occur.

**Precautions:** In elderly and debilitated, limit dosage to smallest effective amount to preclude ataxia, oversedation, confusion (no more than 2 capsules/day initially; increase gradually as needed and tolerated). Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider pharmacology of agents, particularly potentiating drugs such as MAO inhibitors, phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions reported in psychiatric patients. Employ usual precautions in treating anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship not established.

**Adverse Reactions:** No side effects or manifestations not seen with either compound alone reported with Librax. When chlordiazepoxide HCl is used alone, drowsiness, ataxia, confusion may occur, especially in elderly and debilitated; avoidable in most cases by proper dosage adjustment, but also occasionally observed at lower dosage ranges. Syncope reported in a few instances. Also encountered: isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent, generally controlled with dosage reduction; changes in EEG patterns may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice, hepatic dysfunction reported occasionally with chlordiazepoxide HCl, making periodic blood counts and liver function tests advisable during protracted therapy. Adverse effects reported with Librax typical of anticholinergic agents, i.e., dryness of mouth, blurring of vision, urinary hesitancy, constipation. Constipation has occurred most often when Librax therapy is combined with other spasmolytics and/or low residue diets.



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Each capsule contains 5 mg chlordiazepoxide HCl  
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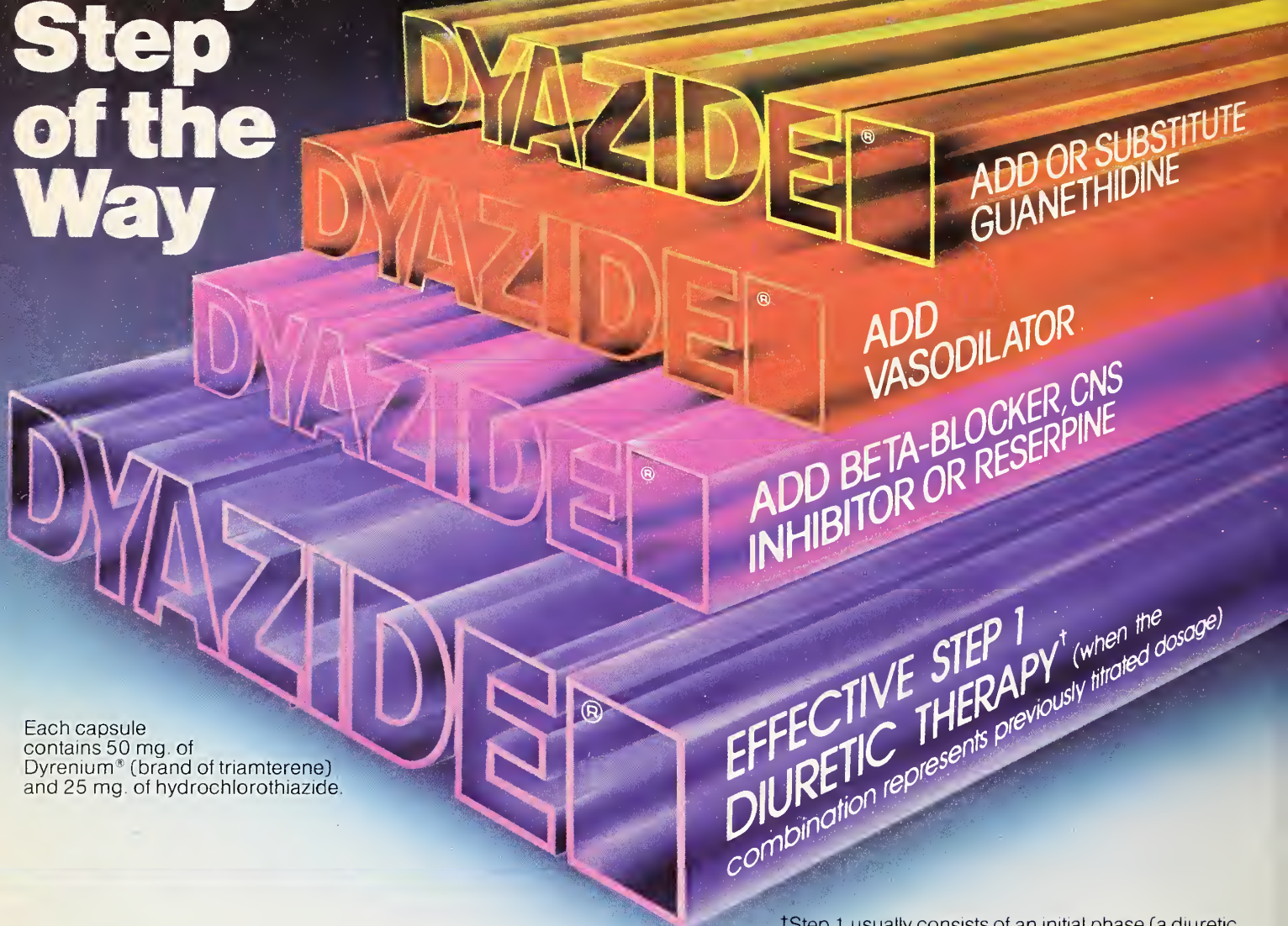
*Antianxiety/Antisecretory/  
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\*Librax has been evaluated as possibly effective for these indications. Please see summary of prescribing information on facing page.



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## Every Step of the Way



Each capsule contains 50 mg. of Dyrenium® (brand of triamterene) and 25 mg. of hydrochlorothiazide.

\*Step 1 usually consists of an initial phase (a diuretic alone), a titration phase (dosage adjustment and/or addition of a K<sup>+</sup> supplement or K<sup>+</sup>-sparing agent), and a maintenance phase (a diuretic alone or in combination with a K<sup>+</sup> supplement or K<sup>+</sup>-sparing agent).

### Serum K<sup>+</sup> and BUN should be checked periodically (see Warnings).

Before prescribing, see complete prescribing information in SK&F Co. literature or PDR. The following is a brief summary.

#### \* WARNING

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

**Contraindications:** Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

**Warnings:** Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K<sup>+</sup> levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K<sup>+</sup> intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and

triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

**Precautions:** Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Watch for signs of impending coma in severe liver disease. If spironolactone is used concomitantly, determine serum K<sup>+</sup> frequently; both can cause K<sup>+</sup> retention and elevated serum K<sup>+</sup>. Two deaths have been reported with such concomitant therapy (in one, recommended dosage was exceeded, in the other, serum electrolytes were not properly monitored). Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene and leukopenia, thrombocytopenia, agranulocytosis and aplastic anemia have been reported with thiazides. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased

dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

**Adverse Reactions:** Muscle cramps, weakness, dizziness, headache, dry mouth, anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances. Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and, rarely, allergic pneumonitis have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis and of impotence have been reported with the use of 'Dyazide', although a causal relationship has not been established.

**Supplied:** Bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (intended for institutional use only); in Patient-Pak™ unit-of-use bottles of 100.

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**SKIN DEEP: *The Making of a Plastic Surgeon***, by Donald T. Moynihan, M.D. and Shirley Hartman. Little, Brown & Co., Boston, 1979. 339 pages. \$10.

This book relates the experiences of a physician during two years of residency in plastic surgery at a large metropolitan hospital. Although it is designed to give "an inside view of one of the most psychologically important and fastest growing forms of surgery," it lacks the real quality of a book such as "The Making of a Surgeon" by William Nolan, M.D., or "The Making of a Woman Surgeon" — also about a plastic surgeon in training — by Elizabeth Morgan, M.D.

The general information is suitably presented and would be of benefit to physicians in other fields as well as the public at large.

Some of the information regarding post-operative care is only geographically typical and not always characteristic of a majority of plastic surgeons in private practice. Because it is in a teaching hospital, patients are usually hospitalized instead of undergoing much of the surgery on an outpatient basis, as is typically done. — J.H.R.

The American Physician Art Association (APAA) welcomes as members all physicians with creative involvement in painting, sculpting, photography, and crafts. Members may submit their work for the annual APAA art exhibit which is professionally judged and nationally acclaimed. Address inquiries to Milton S. Good, M.D., 610 Highlawn Ave., Elizabethtown, PA 17022.

**THE UNIVERSITY OF KANSAS SCHOOL OF MEDICINE-WICHITA** is seeking a Chairperson for the Department of Pediatrics, with a M.D. degree, certification by the ABP, and eligibility for Kansas license required. Experience teaching, administration, service and research desired. Salary negotiable. Position available July 1, 1981. Direct inquiries to: Martin H. Welch, M.D., Chairman Search Committee, University of Kansas School of Medicine-Wichita, 1001 N. Minneapolis, Wichita, Kansas 67214. Applications or nominations with curriculum vitae accepted through September 30, 1981. The University of Kansas School of Medicine-Wichita is an Equal Opportunity Employer. Men and women of all races and with handicaps are encouraged to apply.

## Practice in Living

At the request of the Impaired Physicians Committee of the Kansas Medical Society, space has been made available in the *Journal* for a section featuring articles relating to concerns and problems unique to the lifestyle of the physician. Articles may focus on communication, stress and distress, responsibilities to self, medical marriage, recreation and leisure, and related topics. Manuscripts or suggested topics and questions are solicited and should be submitted to:

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The Journal of the Kansas  
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#### EQUAGESIC—Abbreviated Summary

**INDICATIONS:** Based on a review of this drug by the National Academy of Sciences—National Research Council and on other information, FDA has classified the indications as follows.

Possibly effective for the treatment of pain accompanied by tension and/or anxiety in patients with musculoskeletal disease or tension headache.

Final classification of the less-than-effective indications requires further investigation.

The effectiveness of Equagesic in long term use, i.e. more than four months, has not been assessed by systematic clinical studies. The physician should periodically reassess usefulness of the drug for the individual patient.

**CONTRAINDICATIONS:** Equagesic should not be given to individuals with a history of sensitivity or severe intolerance to aspirin, meprobamate, or ethoheptazine citrate.

**WARNINGS:** Careful supervision of dose and amounts prescribed for patients is advised, especially with those patients with known propensity for taking excessive quantities of drugs. Excessive and prolonged use in susceptible persons, e.g. alcoholics, former addicts, and other severe psychoneurotics, has been reported to result in dependence on or habituation to the drug. Where excessive dosage has continued for weeks or months, dosage should be reduced gradually rather than abruptly stopped, since withdrawal of a "crutch" may precipitate withdrawal reaction of greater proportions than that for which the drug was originally prescribed. Abrupt discontinuance of doses in excess of the recommended dose has resulted in some cases in the occurrence of epileptiform seizures.

Special care should be taken to warn patients taking meprobamate that tolerance to alcohol may be lowered with resultant slowing of reaction time and impairment of judgment and coordination.

**USAGE IN PREGNANCY AND LACTATION:** An increased risk of congenital malformations associated with the use

of minor tranquilizers (meprobamate, chlordiazepoxide, and diazepam) during the first trimester of pregnancy has been suggested in several studies. Because use of these drugs is rarely a matter of urgency, their use during this period should almost always be avoided. The possibility that a woman of child-bearing potential may be pregnant at the time of institution of therapy should be considered. Patients should be advised that if they become pregnant during therapy or intend to become pregnant they should communicate with their physicians about the desirability of discontinuing the drug.

Meprobamate passes the placental barrier. It is present both in umbilical-cord blood at or near maternal plasma levels and in breast milk of lactating mothers at concentrations two to four times that of maternal plasma. When use of meprobamate is contemplated in breast-feeding patients, the drug's higher concentration in breast milk as compared to maternal plasma levels should be considered.

Preparations containing aspirin should be kept out of the reach of children. Equagesic is not recommended for patients 12 years of age and under.

**PRECAUTIONS:** Should drowsiness, ataxia, or visual disturbance occur, the dose should be reduced. If symptoms continue, patients should not operate a motor vehicle or any dangerous machinery. Suicidal attempts with meprobamate have resulted in coma, shock, vasomotor and respiratory collapse, and anuria. Very few suicidal attempts were fatal, although some patients ingested very large amounts of the drug (20 to 40 gm). These doses are much greater than recommended. The drug should be given cautiously, and in small amounts, to patients who have suicidal tendencies. In cases where excessive doses have been taken, sleep ensues rapidly and blood pressure, pulse, and respiratory rates are reduced to basal levels. Hyperventilation has been reported occasionally. Any drug remaining in the stomach should be removed and symptomatic treatment given. Should respiration become very shallow and slow, CNS stimulants, e.g., caffeine, Metrazol, or amphet-

mine, may be cautiously administered. If severe hypotension develops, pressor amines should be used parenterally to restore blood pressure to normal levels.

**ADVERSE REACTIONS:** A small percentage of patients may experience nausea with or without vomiting and epigastric distress. Dizziness occurs rarely when meprobamate and ethoheptazine citrate with aspirin is administered in recommended dosage. The meprobamate may cause drowsiness but, as a rule, this disappears as therapy is continued. Should drowsiness persist and be associated with ataxia, this symptom can usually be controlled by decreasing the dose, but occasionally it may be desirable to administer central stimulants such as amphetamine or mephentermine sulfate concomitantly to control drowsiness.

A clearly related side effect to the administration of meprobamate is the rare occurrence of allergic or idiosyncratic reactions. This response develops, as a rule, in patients who have had only 1-4 doses of meprobamate and have not had a previous contact with the drug. Previous history of allergy may or may not be related to the incidence of reactions.

Mild reactions are characterized by an itchy urticarial or erythematous, maculopapular rash which may be generalized or confined to the groin. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema and fever have also been reported.

More severe cases, observed only very rarely, may also have other allergic responses, including fever, tainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case), and hyperthermia. Treatment should be symptomatic such as administration of epinephrine, antihistamine, and possibly hydrocortisone. Meprobamate should be stopped, and resuscitation of therapy should not be attempted.

Rare cases have been reported where patients receiving meprobamate suffered from aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis, and hemolytic anemia. In nearly every instance reported, other toxic agents known to have caused these conditions have been associated with meprobamate. A few cases of leukopenia during

continuous administration of meprobamate are reported, most of these returned to normal without discontinuation of the drug.

Impairment of accommodation and visual acuity has been reported rarely.

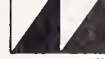
**OVERDOSE:** Two instances of accidental or intentional significant overdosage with ethoheptazine citrate combined with aspirin have been reported. These were accompanied by symptoms of CNS depression including drowsiness and light-headedness, with uneventful recovery. However, on the basis of pharmacological data, it may be anticipated that CNS stimulation could occur. Other anticipated symptoms would include nausea and vomiting. Appropriate therapy of signs and symptoms as they appear is the only recommendation possible at this time. Overdosage with ethoheptazine combined with aspirin would probably produce the usual symptoms and signs of salicylate intoxication. Observation and treatment should include induced vomiting or gastric lavage, specific parenteral electrolyte therapy for ketoacidosis and dehydration, watching for evidence of hemorrhagic manifestations due to hypoprothrombinemia which, if it occurs, usually requires whole blood transfusions.

**DESCRIPTION:** Each Equagesic tablet contains 150 mg meprobamate, 75 mg ethoheptazine citrate and 250 mg aspirin.

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\*This drug has been evaluated as possibly effective for this indication.

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#### WYGESIC—Abbreviated Summary

**INDICATION:** For the relief of mild-to-moderate pain.  
**CONTRAINDICATION:** Hypersensitivity to propoxyphene or to acetaminophen.

**WARNINGS:** CNS ADDITIVE EFFECTS AND OVERDOSE: Propoxyphene in combination with alcohol, tranquilizers, sedative-hypnotics, or other CNS depressants has an additive depressant effect. Patients taking this drug should be advised of the additive effect and warned not to exceed the dosage recommended. Toxic effects and fatalities have occurred following overdoses of propoxyphene alone or in combination with other CNS depressants. Most of these patients had histories of emotional disturbances or suicidal ideation or attempts, as well as misuse of tranquilizers, alcohol, or other CNS-active drugs. Caution should be exercised in prescribing large amounts of propoxyphene for such patients (see **Management of Overdosage**).

**DRUG DEPENDENCE:** Propoxyphene can produce drug dependence characterized by psychic dependence and less frequently, physical dependence and tolerance. It will only partially suppress the withdrawal syndrome in individuals physically dependent on morphine or other narcotics. The abuse liability of propoxyphene is qualitatively similar to codeine's although quantitatively less, and propoxyphene should be prescribed with the same degree of caution appropriate to the use of codeine.

**USAGE IN AMBULATORY PATIENTS:** Propoxyphene may impair the mental and/or physical abilities required for potentially hazardous tasks, e.g. driving a car or operating machinery. Patients should be cautioned accordingly.

**USAGE IN PREGNANCY:** Safe use in pregnancy has not been established relative to possible adverse effects on fetal development. **INSTANCES OF WITHDRAWAL SYMPTOMS IN THE NEONATE HAVE BEEN REPORTED FOLLOWING USAGE DURING PREGNANCY.** Therefore, propoxyphene should not be used in pregnant women unless, in the

judgement of the physician, the potential benefits outweigh the possible hazards.

**USAGE IN CHILDREN:** Propoxyphene is not recommended for children because documented clinical experience has been insufficient to establish safety and a suitable dosage regimen in the pediatric group.

**PRECAUTIONS:** Confusion, anxiety, and tremors have been reported in a few patients receiving propoxyphene concomitantly with orphenadrine. The CNS depressant effect of propoxyphene may be additive with other CNS depressants, including alcohol.

**ADVERSE REACTIONS:** The most frequent adverse reactions are dizziness, sedation, nausea, and vomiting. These seem more prominent in ambulatory than in nonambulatory patients; some of these reactions may be alleviated if the patient lies down. Other adverse reactions include constipation, abdominal pain, skin rashes, light-headedness, headache, weakness, euphoria, dysphoria, and minor visual disturbances. The chronic ingestion of propoxyphene in doses over 800 mg per day has caused toxic psychoses and convulsions. Cases of liver dysfunction have been reported.

**DRUG INTERACTIONS:** Propoxyphene in combination with alcohol, tranquilizers, sedative-hypnotics, and other CNS depressants has an additive depressant effect. Patients taking this drug should be advised of the additive effect and warned not to exceed the dosage recommended. (see **Warnings**) Confusion, anxiety, and tremors have been reported in a few patients receiving propoxyphene concomitantly with orphenadrine.

**MANAGEMENT OF OVERDOSAGE—SYMPTOMS** The manifestations of serious overdosage with propoxyphene are similar to those of narcotic overdosage and include respiratory depression (a decrease in respiratory rate and/or tidal volume, Cheyne-Stokes respiration, cyanosis), extreme somnolence progressing to stupor or coma, pupillary constriction, and circulatory collapse. In addition to these characteristics, which are reversed by narcotic antago-

nists such as naloxone, there may be other effects. Overdoses of propoxyphene can cause delay of cardiac conduction as well as focal or generalized convulsions, a prominent feature in most cases of severe poisoning. Cardiac arrhythmias and pulmonary edema have occasionally been reported, and apnea, cardiac arrest, and death have occurred.

**Symptoms of massive overdosage with acetaminophen** may include nausea, vomiting, anorexia, and abdominal pain, beginning shortly after ingestion and lasting for 12 to 24 hours. However, early recognition may be difficult since early symptoms may be mild and nonspecific. Evidence of liver damage is usually delayed. After the initial symptoms, the patient may feel less ill; however, laboratory determinations are likely to show a rapid rise in liver enzymes and bilirubin. In case of serious hepatotoxicity, jaundice, coagulation defects, hypoglycemia, encephalopathy, coma, and death may follow. Renal failure due to tubular necrosis, and myocardopathy, have also been reported.

Ingestion of 10 grams or more of acetaminophen may produce hepatotoxicity. A 13-gram dose has reportedly been fatal.  
**TREATMENT:** Primary attention should be given to the reestablishment of adequate respiratory exchange through provision of a patent airway and institution of assisted or controlled ventilation. The narcotic antagonists, naloxone, nalorphine, and levallorphan, are specific antidotes against the respiratory depression produced by propoxyphene. An appropriate dose of one of these antagonists should be administered preferably I.V., simultaneously with efforts at respiratory resuscitation and the antagonist should be repeated as necessary until the patient's condition remains satisfactory. In addition to a narcotic antagonist, the patient may require careful titration with an anticonvulsant to control seizures. Analeptic drugs (e.g. caffeine or amphetamine) should not be used because of their tendency to precipitate convulsions.

Oxygen, IV fluids, vasopressors and other supportive measures should be used as indicated. Gastric lavage may be helpful. Activated charcoal can absorb a significant amount of ingested propoxyphene. Dialysis is of little value in poisoning by propoxyphene alone. Acetaminophen is rapidly absorbed, and efforts to remove the drug from the body should not be delayed. Copious gastric lavage and/or induction of emesis may be indicated. Activated charcoal is probably ineffective unless administered almost immediately after acetaminophen ingestion. Neither forced diuresis nor hemodialysis appears to be effective in removing acetaminophen. Since acetaminophen in overdose may have an antidiuretic effect and may produce renal damage, administration of fluids should be carefully monitored to avoid overload. It has been reported that mercaptamine (cysteine) or other thiol compounds may protect against liver damage if given soon after overdosage (8-10 hours). N-acetylcysteine is under investigation as a less toxic alternative to mercaptamine, which may cause anorexia, nausea, vomiting, and drowsiness. Appropriate literature should be consulted for further information. (JAMA 237:2406-2407, 1977). Clinical and laboratory evidence of hepatotoxicity may be delayed up to one week. Acetaminophen plasma levels and half-life may be useful in assessing the likelihood of hepatotoxicity. Serial hepatic enzyme determinations are also recommended.

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## A U X I L I A R Y N E W S

### *An Open Letter to Kansas Physicians*

Our Whitehouse Conference for Presidents was our successful main event for this summer season. Thirty-five ladies traveled from various parts of the state to attend one or both sessions.

Our first session began Thursday, June 25, at 1:30 P.M. with an excellent presentation by one of our members, Dr. Twink Lynch of Shawnee County Auxiliary. Dr. Lynch recently earned her Ph.D. degree in Public Relations and Motivations, and with her theatrical background, presented a good program on Maslow's five levels of human needs — physiology, safety, social affiliation, self-esteem, and self-actualization. It was very informative and well received.

That evening, social hour and dinner at the Coffeyville Country Club were followed by an excellent musical reading by one of our members, Mrs. Mildred (Everett) Brown of Stafford. She chose "Passionella" by Bach. She was ably accompanied at the piano by her friend and neighbor, Mrs. Ethyl Warnock.

The following morning, several of our members presented workshops. Mrs. Frank Bichlmeier instructed us regarding the importance of sending dues to her immediately upon receipt at the county level. Mrs. James Loeffler gave an excellent program stressing the importance of AMAERF. Mrs. Stephen Tempero discussed recent activity in Congress pertaining to health legislation; she emphasized the importance of remaining alert to inappropriate legisla-

tion on health matters. The Learning Center was explained by Mrs. James Geitz, and International Health activities were shared by Mrs. George Milbank. Mrs. Ted Macey (on behalf of Mrs. Boyd Smith, who could not attend) explained that *Communique* will be changed to reduce costs. Mrs. John Rempel discussed Membership.

Mrs. Lucien Pyle presented a beautifully calligraphed resolution to Mrs. William Crouch, National Mother of the Year. This was an expression of our pride in her and her many accomplishments.

The conference concluded with a short tour through the "Little House on the Prairie," located eight miles north of Caney, and made famous by the television series.

I inadvertently omitted the name of Mrs. John Rempel from the list of auxiliaries who attended the convention in Chicago. Membership is the lifeblood of our organization, and Ann attended the membership seminar and brought back new ideas for increasing our numbers. Regarding membership, our new national president, Mrs. Harry Dvorsky, says, "The Auxiliary is the best bargain in town. For \$11 annual dues, a physician's spouse gains access to a democratic organization that sets policies and carries out programs that benefit every community in this country. *Joining is never a matter of dues, but a matter of priority.* We need to convince physician spouses that joining the Auxiliary should be high on their list of priorities."

This fall I hope to visit the auxiliaries across the state and to "turn on" many of your spouses to Auxiliary. Until then . . .

*Betty L. Moore,*

President

Kansas Medical Society Auxiliary





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The Kansas Medical Society Impaired Physicians Program is now operational. If you desire more information concerning this program, if you know an impaired colleague who needs help, or if you are concerned about yourself or your spouse, please contact one of the Committee members nearest you, as listed below, or the KMS Executive Office. All such contacts will be held in strictest confidence and the caller need not reveal his name, if he/she so desires.

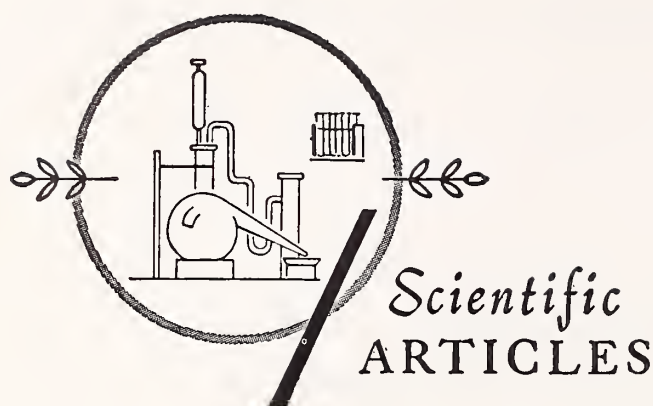
Alcoholism, other drug abuse, and medical/neurological/psychological problems are potentially treatable conditions. All impaired physicians should be encouraged to seek help at the earliest possible time in order to retain or regain full effectiveness to practice medicine. Please contact one of the following:

**John Cody, M.D., Hays . . . . . (913) 628-2871**  
**Robert P. Hudson, M.D., Kansas City . . . (913) 588-7040**  
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**Ivan Rhodes, M.D., Wichita . . . . . (316) 685-1291**  
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**Eighth Annual  
UKSM — Wichita  
Issue**





## A New Technique

### *Percutaneous Transhepatic Biliary Drainage*

RICHARD L. WILSON, M.D.;\* FREDERIC C. CHANG, M.D.;†  
CHARLES E. VANHOUDEN, M.D.\* and CLAYTON H. DIENER, M.D.,‡ *Wichita*

PERCUTANEOUS transhepatic cholangiography is now a well accepted diagnostic procedure for patients with obstructive jaundice, but only recently has a sheathed needle been utilized as a method of external biliary decompression. In September 1973, Molnar and Stockum were first in the United States to report successful percutaneous transhepatic biliary drainage (PTBD) in patients with obstructive jaundice.<sup>1</sup> Since then others have utilized the technique which involves passage of a sheathed needle under fluoroscopic control through the liver into the biliary ducts for drainage. Recently at the Wichita VA Hospital we had the opportunity to utilize this procedure which proved to be extremely helpful in the management of a severely ill patient with acute cholangitis. This initial experience prompted further study and a review of the literature. Although we do not have a large series, we have performed PTBD in two patients within the last year. The following is a report on one of these patients.

#### Case Report

A 52-year-old white male was admitted to the

Wichita VA Hospital with severe midepigastic pain. He had undergone cholecystectomy for cholelithiasis 13 years earlier. He also had a history of chronic alcoholism and delirium tremens.

Physical examination revealed: temperature,

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**Percutaneous transhepatic biliary drainage is a relatively new method for nonsurgical decompression of the biliary tree. The method has been shown to be effective in decompressing the patient with malignant biliary obstruction as well as preparing jaundiced patients for definitive surgical treatment.**

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38°C, and pulse, 120/min. He was described as shaking and trembling with marked jaundice. He complained of diffuse midepigastic pain but no rebound tenderness was present. The liver span was 15 cm. Initial laboratory investigation revealed alkaline phosphatase, 1310 units/l; total bilirubin, 4.2; and SGOT, 366. The admission sonogram revealed dilatation of the common bile duct with evidence of stones. Subsequently the patient developed progressive tremors, became disoriented, and finally unresponsive several hours after admission. Treatment for delirium tremens was begun. The following day blood cultures positive for streptococcus and klebsiella were obtained and systemic antibiotic therapy

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Address reprint requests to Dr. Chang, Department of Surgery, St. Francis Hospital, 929 No. St. Francis, Wichita, KS 67214.



*Figure 1.* Cholangiogram demonstrates location of the needle in the right hepatic duct. Notice the large dilated common bile duct with filling defects distally indicating the stones.



*Figure 2.* This roentgenogram shows the final position of the catheter with the end in the distal common bile duct.

was begun. The patient's condition continued to deteriorate and finally he underwent PTBD one day later (*Figures 1, 2*). Several hours after drainage was achieved the alkaline phosphatase dropped to 543 units/l, and two weeks later the level was near normal at 231 units/l. Three weeks after PTBD he underwent successful removal of common duct stones and choledochojunostomy. He was discharged on the seventh postoperative day.

### Technique

Nakayama and Hoevels have described the technique and instrumentation.<sup>2, 3</sup> We used a modification of these techniques. Routine measures prior to the procedure should include a check of bleeding parameters, antibiotic prophylaxis, sedative premedication, sterile precautions, and informed consent.<sup>4</sup> The procedure is performed with the patient in the supine position. After the skin is surgically cleansed, local anesthesia is infiltrated along the intended path of the sheathed needle usually within the ninth intercostal space in the midaxillary line. The patient is then asked to suspend respiration while the 18 gauge needle with polyethylene catheter is advanced through the intercostal muscles into the hepatic parenchyma. Optimally the right hepatic duct is cannulated because it provides a better angle for advancement of the catheter into the common bile duct. Under fluoroscopic guidance the needle is advanced until it is certain the right hepatic duct has been crossed. A syringe is then placed on the needle after the stylet is removed and with gentle suction, withdrawn until a free flow of bile is obtained. It

may be helpful to have radiopaque dye in the syringe for injecting the biliary system to delineate the anatomy of the bile ducts and locate the needle. After the needle has been satisfactorily placed, the syringe and needle are removed and a flexible guidewire passed through the catheter downward into the common bile duct. With constant rotation, the catheter is then advanced over the guidewire into the common bile duct. The guidewire is then removed and the catheter hooked to dependent drainage. The catheter should be sutured to the skin to insure its position.

### Catheter Care

Once the catheter is in place, care must be taken to avoid infection as well as electrolyte disturbance. Mechanical problems include catheter dislodgement, bleeding through the catheter, and catheter obstruction. Strict aseptic technique should be used during any catheter manipulation. Cultures of the bile may be obtained if the patient is suspected of having an infected catheter. These almost always respond to instillation of the appropriate antibiotic into the catheter.

Normal bile flow approaches 600 ml/24 hrs and has high electrolyte concentration, especially in sodium and bicarbonate.<sup>4</sup> These losses must be replaced and adjusted by frequent monitoring of serum electrolytes. Replacement of bile salts is usually not required unless bile diversion is long term.

If the catheter becomes dislodged, often the previous path may be found by gentle probing of the catheter tip. If this fails, the procedure must be repeated emphasizing the importance of preventing



this occurrence. As mentioned previously, the catheter should be securely sutured. The catheter may become dislodged by vigorous respiratory effort; therefore, testing of pulmonary function should be avoided. Bleeding through the catheter occurs when one of the proximal side holes of the catheter is positioned within a major hepatic or portal venous channel. This is easily corrected by repositioning the catheter. To keep the catheter open it should be irrigated twice daily with sterile saline or antibiotic solution if indicated.

### Internal Drainage

PTBD may also be used as a permanent stent for palliation in those patients with inoperable cancer. To establish internal drainage, a catheter with multiple side holes is used. "Catheter position is adjusted so that at least several side holes are located above the obstruction as reflected by good filling of the hepatic radicles after injection of contrast material."<sup>4</sup> The tube is then clamped externally which shunts the bile from above the obstruction through the side holes into the catheter, which carries it distally into the duodenum. Unless a curative surgical procedure is planned, this prosthesis is beneficial for palliative decompression of the biliary tree, saving extensive abdominal surgery.<sup>5</sup>

### Results

The technique is generally applicable to patients with extrahepatic obstruction. Benign conditions lending themselves to PTBD include biliary stricture and ascending cholangitis in the face of sepsis or shock. It is also beneficial as a first step in preparation for a surgical biliary bypass procedure in patients with a high bilirubin or in severely debilitated patients with operable jaundice. Palliation for malignant disease has also been a frequent indication. In those patients deemed inoperable, it is used to alleviate the symptoms related to obstructive jaundice. Several groups, including Pereiras *et al.*, have accomplished decompression with internal drainage with disappearance of pruritis in seven of seven patients, and disappearance of jaundice in ten of twelve.<sup>5</sup> Not uncommonly, metastatic lymphadenopathy invading the porta hepatis results in obstruction of the biliary tree which lends itself to PTBD.

In reviewing the literature, nine series were encountered; however, the largest series of Tylen,<sup>6</sup> Nakayama,<sup>2</sup> and Hansson<sup>7</sup> all originate outside the United States. Evaluation of the nine reports revealed they were successful in accomplishing drainage in 95 per cent of patients. Failures were often related to distortion of the hepatic parenchyma by

malignancy. Further evaluation revealed that in patients catheterized, approximately 91 per cent had a satisfactory drop in bilirubin. Pollock *et al.*, demonstrated an average drop of 15 mg/dl in total serum bilirubin. Six of the patients in this study did not become less jaundiced despite adequate catheter position and patency because of progressive hepatic parenchymal disease (metastasis, biliary cirrhosis).<sup>8</sup>

### Complications

Complications do occur with the procedure but they are generally easily managed. In the series reviewed there were 75 complications reported in 511 patients for a 14 per cent complication rate. However, one-fourth of these complications were transient fever easily managed by conservative measures. Most of the patients had fever for a couple of days ranging up to 39°C. The temperature elevation can readily be explained first on the basis of temporary bacteremia caused by the backflow of the infected bile into the liver sinusoids with consequent bacteremia. The other possible reason is the occasional escape of bile along the inserted catheter into the retroperitoneal space. None of these patients developed bile peritonitis or required further surgery.<sup>1</sup> The second most common complication — acute cholangitis occurring in 4 per cent of all patients — is another easily managed problem. Acute cholangitis in this setting is usually associated with catheter obstruction and easily resolved by irrigation of the catheter and appropriate antibiotics. Other less common complications include transient hypotension, hemobilia, hyponatremia, and pneumothorax. The most serious complications reported were intra-abdominal bleeding and bile leakage. Hansson reported the latter complication requiring emergency operation in three patients in his series of 105.<sup>7</sup> Ferucci reports one case requiring urgent laparotomy for intra-abdominal hemorrhage.<sup>4</sup> All patients survived.

### Discussion

Clearly, PTBD of unresectable malignant biliary obstruction offers a satisfactory alternative to surgical bypass. Possibly more important is the reduction in operative mortality for those patients with surgically approachable problems. In jaundiced patients with resectable tumor or other surgically approachable biliary disease such as biliary stenosis and ascending cholangitis, reduction of bilirubin decreases the operative mortality significantly. Nakayama demonstrated this decrease in mortality in a controlled study. One group of 105 patients received preoperative decompression and a second

(Continued on page 406)

# Amniocentesis

## *Prenatal Diagnosis*

**SECHIN CHO, M.D.;\* CARL CHRISTMAN, M.D.;† SUSAN ANN SCHOENECKER, R.N.,‡ and DANIEL K. ROBERTS, M.D., Ph.D.,§ Wichita**

PRENATAL DIAGNOSIS has been one of the most important recent developments in medical genetics. In the past, genetic counseling was limited to providing prospective parents with risk figures for future offspring. With prenatal diagnosis, these parents are now able to choose, utilizing the information from prenatal diagnosis, whether or not they wish to continue with a pregnancy that involves an affected fetus.

Many families who face serious genetic risks are now able to proceed with their plans for having children without fear of giving birth to a child with a specific genetic disease.

Prenatal diagnosis has been available through research centers since 1970. With acceptance by the medical profession and increased demand, major health centers throughout the country are now able to provide this service.

The Prenatal Diagnosis and Genetic Clinic, providing comprehensive prenatal diagnosis, was established at Wesley Medical Center in 1978. The clinic is directed by a medical geneticist and is staffed by an obstetrician, two radiologists, a perinatal nurse, and a clinic coordinator.

### **Procedures**

Patient referral was made to the Prenatal Diagnosis and Genetic Clinic by the patient's physician prior to the 14th week of gestation.

The patient was counseled by the medical genet-

cist. Pre-amniocentesis counseling covered the indication for prenatal diagnosis, risk figures, procedure and object of ultrasound examinations, amniocentesis procedure and its possible complications, cell culture procedure and its possible failure, accuracy of the chromosome analysis, and alpha-

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**Two hundred sixty-one consecutive prenatal genetic diagnoses in Wichita were analyzed from January 1978 to May 1981. Twelve studies revealed abnormalities. No fetal mortalities directly related to amniocentesis have been identified.**

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fetoprotein. The patient was informed that although prenatal diagnosis can give the answers for questions asked, it cannot guarantee a completely normal, healthy infant.

Ultrasound examination was obtained by B-scan machine and analyzed by one of the two radiologists specially trained in this field. Following ultrasonography, the patient was transferred to the amniocentesis procedure room. Amniocentesis was performed by a designated obstetrician with the assistance of a portable realtime scanner. Prior to amniocentesis, maternal serum was obtained to measure alpha-fetoprotein. Following amniocentesis, vital signs were checked and fetal heart rate was monitored for at least one-half hour by the perinatal nurse. The patient was then released with instructions. The amniotic fluid was then readied for shipment to the appropriate laboratories for fibroblast culture, karyotyping, and alpha-fetoprotein assay.

Since the genetic laboratory at Wesley Medical Center was only recently established and its capacity limited, samples that exceeded the capacity were shipped to the genetic laboratory at the University of Nebraska and the University of Colorado. For every sample sent to the outside laboratory, small amounts of fluid were kept for back-up culture at the genetic laboratory at Wesley Medical Center.

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Address reprint requests to Dr. Cho, Wesley Medical Center, 550 No. Hillside, Wichita, KS 67214.



Amniotic fluid cell culture was established in two independent incubators and karyotype was prepared from primary cultures. If it was at all possible, the minimum of 20 metaphases were counted. Among them, five were sight-karyotyped and a minimum of three were photographed for formal karyotyping. Trypsin-giemsa banding technique was the routine procedure in the laboratory.

Until February 1980, alpha-fetoprotein was assayed at the Radio-immunoassay Laboratory at Wesley Medical Center. Beginning in March 1980, alpha-fetoprotein was assayed by a commercial laboratory.

In order to avoid misunderstanding and confusion, all results were reported directly to the referring physician. For the patient with normal results, followup counseling by the referring physician was encouraged to review the results and to remind the patient of the limitations of prenatal diagnosis. For the patient with an abnormal fetus, followup genetic counseling sessions were scheduled through the referring physician's office. Parents were informed of the results, their clinical significance, and impact on the family. The final decision whether to continue with the pregnancy or not was made by the family after followup genetic counseling. Approximately seven months following the procedure, questionnaires were sent to the referring physician to confirm the final results at birth.

## Results

### *Clinical Growth and Referral Patterns*

The Prenatal Diagnosis and Genetic Clinic at Wesley Medical Center/UKSM-Wichita handled 261 referrals from January 1978 to May 1981. The clinic received 39 referrals in 1978, 72 in 1979, 98 in 1980; during the first five months in 1981, 52 patients have been referred for prenatal diagnosis.

Figure 1 illustrates the number of patient referrals by county. Patients came from 40 counties located in

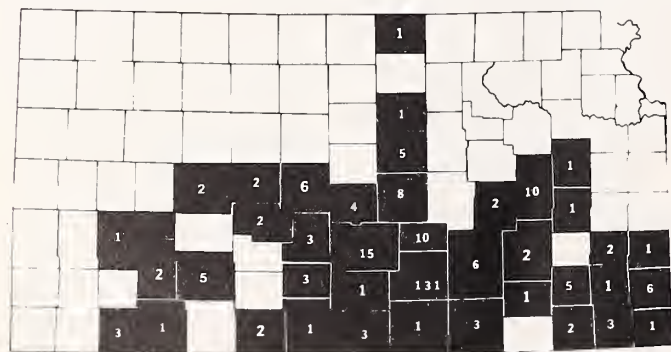


Figure 1. Patient referrals by county.

the north central and southern half of Kansas. One-half of the patients came from Sedgwick County, with Reno, Harvey, and Lyon counties following.

Two patients were referred from Oklahoma. The overwhelming majority (81%) were referred by obstetricians, and 18 per cent were referred from family physicians/general practitioners.

### *Indications*

The indications for prenatal diagnosis in our clinic are shown in Table I. In some pregnancies, there were more than one indication. Advanced maternal age was by far the most common cause for this procedure (64.4%). This was followed by a previous child with chromosomal abnormalities (8.64%) and neural tube defects (8.2%).

Among 24 pregnancies with previous chromosomal abnormalities, there were 11 Down's syndrome, three trisomy 13, two trisomy 18, one trisomy 22, and two marker chromosomes. One

TABLE I  
INDICATIONS FOR PRENATAL DIAGNOSIS

Indications	No. of Pregnancy	% of Total Prenatal Diagnosis
Chromosomal indications	(234)	(84.2)
Advanced maternal age (>35 yr)	179	64.4
Previous child with		8.64
chromosomal abnormality	24	
Down's syndrome	16	
Trisomy 18	2	
Trisomy 13	3	
Trisomy 22	1	
Marker chromosomes	2	
Family translocation	1	0.36
Others	30	10.8
Sex determination	(2)	(0.72)
Hemophilia B	1	0.36
Duchenne muscular dystrophy	1	0.36
Alpha-fetoprotein	(30)	(10.8)
Previous neural tube defect	23	8.28
Family history of NTD	6	2.16
Elevated serum AFP	1	0.36
Biochemical disease	(5)	(1.8)
Adenosine deaminase deficiency	1	0.36
Congenital adrenal hyperplasia	1	0.36
Krabbe's disease	1	0.36
Cystic fibrosis	2	0.72
Others	(5)	(1.8)
Infantile polycystic kidney	2	0.72
Gastrointestinal obstruction	2	0.72
Potter's syndrome	1	0.36

mother with balanced translocation, 46 XX, t(10:13), had a son with partial 10q trisomy.

The 23 previous cases of neural tube defects included anencephaly, encephalocele, meningocele, spina bifida, parents (or parent) with spina bifida occulta, and Meckel-Gruber syndromes.

Thirty patients sought prenatal diagnosis for various reasons: family history of Down's syndrome; severe maternal anxiety caused by patients' involvement in special education, state hospital, and training centers; handicapped child care; multiple previous miscarriages; and previous child with multiple congenital anomalies.

Sex determination was carried out for one family with hemophilia B and another family with Duchenne muscular dystrophy. Although close to 100 biochemical diseases can be detected prenatally, only five pregnancies were monitored for these reasons. They were Krabbe's disease, adenosine deaminase deficiency, congenital adrenal hyperplasia, and cystic fibrosis. Each of these patients had previously borne an affected child. Prenatal diagnosis of cystic fibrosis was offered as a collaborative research project with Dr. H. Nadler's laboratory in Chicago. Prenatal diagnosis for hemoglobinopathies has not been attempted due to lack of demand in our area.

#### *Cell Culture and Chromosome Analysis*

All but one of the cultures were successful between the service laboratories. Leakage occurred from two samples during shipment, and two samples had "no growth" in the out-of-town service laboratory. However, back-up cultures at Wesley Medical Center were successful, and satisfactory results were obtained.

Seven amniotic fluid fibroblast karyotypes were abnormal: 46, XX, 13 + , t(10:13); mos. 47, XXX/46, XX; 47, XXX; mos. 47, XY, +21/46, XY; 47, XX, +21; 47, XXY; mos. 47, XY, +18/46, XY.

The mother of the partial 10q trisomy was a balanced carrier and had one boy with the same defect. The prenatal diagnoses of the 47, XXX and the 47, XXY infants were done because of advanced maternal age.

The mother of the mos. 47, XXX/46, XX infant had a child with Down's syndrome. All four families elected to continue the pregnancies and delivered babies at term. The female infant with partial 10q trisomy revealed the same multiple congenital malformations as her brother. As expected, the three infants with 47, XXX/46, XX, 47 XXX and 47 XXY did not show any physical malformations.

The pregnancies with mos. 47, XY, +21/46, XY and 47, XX +21 were elected to be terminated. These patients were 43 and 41 years of age.

The family with mosaic trisomy 18 decided to continue the pregnancy since three metaphases showing trisomy 18 were originated from one colony and the other metaphases from other colonies were normal. Cytogenetic findings may not suggest true mosaicism, but cytogenetic examination following the baby's birth is the only method by which to confirm our impression.

Of the two families who sought sex diagnosis, one family had a previous boy with Duchenne muscular dystrophy. In this case, tests indicated a male fetus. Further work-up through fetoscopy at another medical center was offered. The family declined, however, and the pregnancy was terminated. Another family delivered a normal female infant.

In one case, a normal female infant was predicted. A normal male infant, however, was delivered.

#### *Alpha-Fetoprotein*

Alpha-fetoprotein was assayed in nearly every available amniotic fluid. In 30 cases, alpha-fetoprotein assay was the primary indication for amniocentesis. Four samples showed abnormal results. The first case was that of a mother who had had a previous child with meningocele. Her amniotic fluid alpha-fetoprotein level was 7 s.d. above the mean. Ultrasound sonogram failed to recognize the neural tube defect. The pregnancy was terminated, and the abortus had spina bifida at the thoraco-lumbar level.

The second case was identified by ultrasound sonography. The amniotic fluid alpha-fetoprotein was also abnormal. The infant was delivered prematurely and had thoracic meningocele with hydrocephalus.

The third case showed meconium-stained amniotic fluid at the time of amniocentesis, and alpha-fetoprotein assay was above the mean +5 s.d. The pregnancy resulted in spontaneous miscarriage.

The fourth case also demonstrated high alpha-fetoprotein level in the amniotic fluid, and further work-up is being done at this point. Neural tube defect and Rh isoimmunization are strong possibilities in this family.

#### *Followup*

To improve and evaluate clinic performance, followup letters have been sent to referring physicians. One hundred per cent of these inquiries have been answered to date.

Choanal atresia, inguinal hernias with ompha-



locele, and a pyloric stenosis were reported following birth. These are malformations that prenatal diagnosis cannot readily detect.

### *Safety of Procedure*

Nearly all of the amniocentesis procedures were performed by a designated obstetrician with the aid of a portable realtime sonogram machine, and no fetal mortality has been observed during or shortly after amniocentesis. Based on reports from the referring physicians, no fetal deaths have been found directly related to this procedure. However, two missed abortions and a fetal death were found by ultrasound sonogram prior to amniocentesis. To our knowledge, there have been three miscarriages, two premature deliveries, and three stillbirths in which no fetal abnormalities have been detected by prenatal diagnosis.

### **Discussion**

There have been numerous articles written on prenatal diagnosis, even in consumer magazines.<sup>1-3</sup>

It is hoped that sharing of Wichita experiences with the referring physicians in Kansas will result in optimal utilization of facilities and service to patients.

The Prenatal Diagnosis and Genetic Clinic at Wesley Medical Center/University of Kansas School of Medicine-Wichita (WMC/UKSM-W), was one of the earliest organized clinics in our state to provide comprehensive prenatal diagnosis. Since the foundation of the clinic, the number of referrals has grown steadily. In 1981, the clinic is expected to handle approximately 125 patient referrals for prenatal diagnosis. The clinic is expected to grow continuously until it reaches a peak of approximately 200 referrals/year. In Kansas, there are approximately 1200 women/year who become pregnant after age 35 years. The clinic has received patient referrals from 40 counties in the southern half of the state. Its referral pattern has been similar to that of the high-risk mother and newborn transport system. This is understandable since the Prenatal Diagnosis and Genetic Clinic is a part of the perinatal division, WMC/UKSM-W.

It was surprising that only 18 per cent of our referrals came from the family physician/general practitioner. More vigorous contact with these physicians is needed to provide current information on prenatal diagnosis.

Indications for prenatal diagnosis in our clinic were comparable to other published reports. Four of the 12 abnormal studies came from families with a previously affected child. This emphasizes the fact

that prenatal diagnosis should be strongly recommended for the high-risk group. Translocation carriers and families with previous neural tube defect will be the highest risk group, except for biochemical and hematological indications. Considering the ethnic make-up in our area, prenatal diagnosis for hemoglobinopathies is not expected. Prenatal diagnosis for biochemical diseases should be utilized more than it is at the present time.

The safety of amniocentesis has been established.<sup>4</sup> It is important to point out that safety was achieved only when the amniocentesis was performed by experienced obstetricians in a controlled environment. The rate of spontaneous abortion after amniocentesis up to 28 weeks gestation is 1.5 per cent.<sup>1</sup>

The value of ultrasound sonography cannot be overemphasized. It helps to verify a viable fetus, estimate gestational age, rule out multiple pregnancy, locate fetal position, amniotic fluid and placenta, and to examine for possible neural tube defects. It is our policy that every patient scheduled into our clinic shall have a complete pregnancy sonogram which will be interpreted by one of two designated radiologists.

Alpha-fetoprotein assay has been a problem to us due to the federal regulation changes relating to this matter. Interpreting elevated amniotic fluid alpha-fetoprotein levels is not an easy task.<sup>5</sup> First, a reproducible assay system has to be established and the normal data has to be collected from adequate samples with correct gestational ages.

The potential for false negatives can be seen among the conditions with closed neural tube defect, miscalculated gestational age, and the inadvertent acquisition of maternal urine. On the other hand, potential false positives can be seen in conditions with fetal blood contamination, overestimation of gestational age, fetal death, spontaneous abortion, twins, congenital nephrosis, cystic hygroma, Turner's syndrome, unbalanced D/G translocation, multiple hypospadias, and pilonidal sinus. The karyotype error rate in the established laboratory was 0.07 per cent, and the accuracy of neural tube defect diagnosis was 90 per cent.<sup>1, 5</sup>

In our experience, the prime benefit from amniocentesis is to deliver good news to high-risk families, alleviating their anxieties and enabling them to enjoy the latter half of the pregnancy. For the small number of families who carried abnormal fetuses, a decision regarding the options available to them can be made following genetic counseling.

Prenatal diagnosis cannot guarantee a completely  
(Continued on page 412)

# Membranous Glomerulonephropathy

## *Thyroid Antigen-Antibody Immune Complex MGN*

HUGO P. WEBER, JR., M.D. and LEO P. CAWLEY, M.D., Wichita

MEMBRANOUS glomerulonephropathy (MGN) is a well defined histopathologic entity characterized by the presence of electron dense deposits containing immunoglobulins in a subepithelial location along the glomerular capillary wall. MGN was recognized in 1938 as one of a distinct sub-set of glomerulonephropathies producing nephrotic syndrome. It is the most common histologic finding in adult patients presenting with nephrotic syndrome. In the majority of patients with MGN the pathogenesis is unknown. An increasing number of patients, however, are being described in whom primary illness of diverse origin is found to be associated with the clinical and histologic features of MGN.

In this report we discuss the case of a patient found to have MGN secondary to chronic lymphocytic thyroiditis (Hashimoto's thyroiditis).

### Case Report

A 22-year-old white female presented in May 1980 with a three year history of thyroid enlargement. She had been found to have asymptomatic proteinuria in May 1979. Results of thyroid function studies at that time were compatible with the diagnosis of Hashimoto's thyroiditis. The antithyroglobulin antibody titer in May 1979 was 1:40,960, and in May 1980 was 1:10,240. Antimicrosomal antibodies were present in a titer of 1:160. Thyroid index in May 1980 was 1.4 (normal 1.3-5.2).

Renal function studies in May 1980 demonstrated moderate proteinuria of 1.6 gm/day, and creatinine clearance of 90 ml/min. Antinuclear antibody has been absent on two occasions and present on two occasions, with the highest titer being 1:160. A false positive serology was found.

Following renal biopsy the patient received thyroid suppression. Prednisone, 120 mg every other day, was given for two months and then tapered over another two month period. Antibodies against thyroid constituents disappeared with steroids, but there was no change in the amount of daily protein excretion. Removal of the antigen source by complete thyroidectomy was accomplished in November 1980

when the patient experienced an exacerbation of thyroiditis with painful enlargement of the gland. There has been no appreciable change in renal function or in the amount of protein excretion following thyroidectomy.

### Materials and Methods

Percutaneous renal biopsy was performed in May 1980. A portion of the specimen was placed in 10 per

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**A case of Hashimoto's thyroiditis complicated by proteinuria in a 22-year-old female is described. Examination of renal biopsy tissue demonstrated the presence of membranous glomerulonephropathy. Indirect immunoperoxidase microscopy demonstrated prominent localization of thyroglobulin within the proximal convoluted tubules and the glomerular basement membrane.**

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cent formalin, sectioned at 4 microns, and stained for light microscopy with hematoxylin-eosin, PAS, PAM, and Masson trichrome stains. A portion of renal tissue was collected in 2.5 per cent glutaraldehyde for electron microscopy. A third portion of tissue was frozen in O.C.T. for immunofluorescent microscopy.

Paraffin embedded tissue was utilized for the detection of glomerular complexes consisting of thyroglobulin and antithyroglobulin. Sections were dewaxed through xylene and alcohol to water, bleached with 7.5 per cent hydrogen peroxide and distilled water, and washed in tap water. Endogenous peroxide was inhibited with 2.28 per cent periodic acid in distilled water, and the slides returned to water. Aldehyde groups were blocked in a five minute wash of 0.02 per cent borohydride and washed in water. Slides were incubated in a moist chamber with rabbit antithyroglobulin for thirty minutes. Residual antibody was removed by washing in PBS Tween. The second antibody was affinity purified goat antirabbit IgG peroxidase labeled. This antibody was left on for thirty minutes and residual antibody removed by

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washing in PBS Tween. Slides were incubated in diaminobenzine (DAB) (10 mg DAB in 10 mL with 0.03%  $H_2O_2$  in PBS). After five minutes, residual reactants were removed by washing in tap water. Specimens were then counterstained with hematoxylin, dehydrated, cleared, and mounted in permount.<sup>1, 2</sup>

Immune complexes of thyroglobulin and antithyroglobulin were demonstrated in the patient's serum by C-1q binding. Antibodies to thyroglobulin and complexes of antithyroglobulin-thyroglobulin were demonstrated by reverse immunofixation.

## Results

Under light microscopy, 15 glomeruli were examined, of which four were sclerotic. The remaining glomeruli exhibited segmental thickening of the basement membrane with normal cellularity. Silver methenamine staining demonstrated epimembranous spikes extending off the capillary basement membrane.

Immunofluorescent microscopy demonstrated granular deposition of IgG and complement along the glomerular capillary wall.

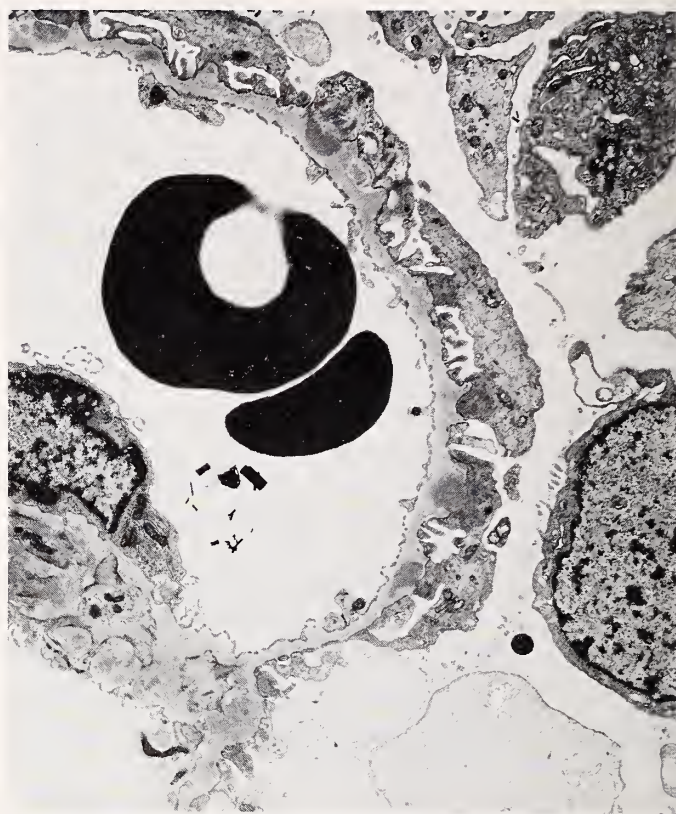
Electron microscopy confirmed the presence of electron dense deposits, the hallmark of MGN, in a subepithelial and subendothelial location along the capillary basement membrane (*Figure 1*).

Microscopic examination of the immunoperoxidase stained tissue demonstrated prominent localization of thyroglobulin within the cytoplasm of proximal convoluted tubules. Localization of peroxidase was likewise seen in the glomeruli in a granular pattern corresponding to the locus of IgG and complement deposition on immunofluorescent microscopy and the locus of electron dense deposits on electron microscopy. Indirect immunoperoxidase microscopy thus provided strong evidence that the immune complexes demonstrated by renal biopsy were comprised of thyroglobulin and antithyroglobulin.

## Discussion

Chronic lymphocytic thyroiditis is an autoimmune disease in which 95 per cent of patients will exhibit antibodies against thyroglobulin and thyrocytoplasmic constituents. The demonstration of thyroglobulin in the glomeruli and tubules of this patient's kidney suggests that her renal disease was an immunologic complication of chronic lymphocytic thyroiditis.

One of three events could explain the immunopathogenesis: First, intrarenal deposition of circulating thyroglobulin-antithyroglobulin immune com-



*Figure 1.* Electron photomicrograph of renal biopsy demonstrating electron dense deposits in capillary basement membrane.

plexes; second, in situ renal immune complex formation as circulating antithyroid antibody combined with previously trapped intra-renal thyroid antigen; and third, the combination of secondary autologous antibody directed against thyroid immune complexes deposited in the kidney.<sup>3</sup> It is not possible in this case to define which of these mechanisms might be responsible for the patient's renal disease; however, much of the published literature supports an immunologic pathogenesis for thyroid-antithyroid membranous glomerulonephropathy.

Experimental thyroiditis with renal disease has been induced in rabbits by the periodic injection of chemically altered homologous thyroglobulin. These animals develop thyroiditis and circulating antibodies to thyroglobulin.<sup>4</sup>

Chronic glomerular changes of endothelial cell proliferation and membrane thickening occur in rabbits receiving six monthly injections of such chemically altered thyroglobulin. Renal damage most likely results from the deposition of immune complexes in which the antigen is the injected homologous thyroglobulin or native thyroglobulin released from the injured thyroid gland.



Ploth *et al.*, describe the case of a young male who developed glomerulonephritis after receiving two doses of  $^{131}\text{I}$  for treatment of thyrotoxicosis. Circulating immune complexes of thyroglobulin and anti-thyroglobulin were detected, and thyroglobulin was demonstrated in glomerular immune complexes.<sup>5</sup>

MGN has been described in a 15-year-old female with nephrotic syndrome and chronic lymphocytic thyroiditis. Thyroglobulin and thyroid cytoplasmic antigen were demonstrated in her glomeruli by indirect immunofluorescent microscopy.<sup>6</sup>

An increasing number of intrinsic and extrinsic antigens are being identified in association with MGN and the nephrotic syndrome. It is estimated that as many as one-third of adult patients with MGN will demonstrate a primary illness and antigen source to account for their renal disease. The possibility exists that the patient reported in this communication has systemic lupus erythematosus. Hashimoto's thyroiditis overlaps in occurrence with other autoimmune diseases.

Other recent case reports and experimental work emphasize the importance of trying to identify the antigenic stimulus in cases of human glomerulonephritis.<sup>7, 8</sup> Future treatment modalities may then be directed toward removing the antigenic source, in addition to immune and inflammatory suppression with medication such as steroids.

## Summary

We have described the case of a 22-year-old female discovered to have chronic lymphocytic thyroiditis and proteinuria. Percutaneous renal biopsy demonstrated the presence of membranous glomerulonephropathy. The technique of indirect immunoperoxidase microscopy demonstrated the membranous deposits to contain thyroglobulin providing yet another example of secondary membranous glomerulonephropathy.

## References

1. Heyderman, E.: Immunoperoxidase technique in histopathology: Applications, methods, and controls. *J. Clin. Pathol.* 32:971, 1979.
2. Minard, B. J. and Cawley, L. P.: Use of horseradish peroxidase to block nonspecific enzyme uptake in immunoperoxidase microscopy. *J. Histochem. Cytochem.* 26(8):685, 1978.
3. Cameron, J. S.: Pathogenesis and treatment of membranous nephropathy. *Kidney Int.* 15:88, 1979.
4. Weigle, W. O. and Nakamura, R. M.: Perpetuation of autoimmune thyroiditis and production of secondary renal lesions following periodic injections of aqueous preparations of altered thyroglobulin. *Clin. Exp. Immunol.* 4:645, 1969.
5. Ploth, D. W. *et al.*: Thyroglobulin-antithyroglobulin immune complex glomerulonephritis complicating radioiodine therapy. *Clin. Immunol. Immunopathol.* 9:327, 1978.

6. O'Regan, S. *et al.*: Thyroid antigen-antibody nephritis. *Clin. Immunol. Immunopathol.* 6:341, 1976.
7. Jordan, S. C. *et al.*: Immune-complex glomerulonephritis mediated by thyroid antigens. *Arch. Pathol. Lab. Med.* 102:530, 1978.
8. Jordan, S. C. *et al.*: Studies of immune complex glomerulonephritis mediated by human thyroglobulin. *N. Engl. J. Med.* 304:1212, 1981.

# Vox Dox

## Vox Dox Editor:

The National Pancreatic Cancer Project was funded by the National Cancer Institute in 1975 to stimulate research related to pancreatic cancer, now the fourth most frequent cause of death from cancer in the United States. Patients and families of patients with pancreatic cancer often contact the National Cancer Institute from which they are referred to this Project. In a determined effort to avoid any interference with the patient-physician relationship, I tell patients that I will share whatever information I have with the responsible physician, but I do not voice any opinions directly to the patient or to the patient's family.

To improve the care of these patients, we try to maintain current information on new approaches to the diagnosis and treatment of pancreatic cancer and the names of individuals or institutions participating in advanced treatment protocols. We have information about certain institutions with highly specialized facilities, some of which provide transportation and medical care at no cost to the patient. This kind of information I am happy to share with any physician. The final recommendation for a patient's treatment by any modality must come from the primary physician.

This letter is to inform Kansas physicians of the availability of this information. A call to me — 504-522-4571 — will allow me to share information that might help the patient and might allow me to suggest some more advanced treatment program, often available in geographic proximity to the patient.

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# Cardiac Pacemakers

## *Safety and Efficacy of Implantable Transvenous Units*

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S. JIM FARHA, M.D., ‡ *Wichita*

COMPLETE HEART block carries a 40-50 per cent mortality rate during the first year following diagnosis when treated medically.<sup>1-7</sup> Cardiac pacing markedly improves survival in these patients. Sinus node dysfunction is another common indication for pacemaker insertion. Following is a review of our experience with implanted transvenous cardiac pacemakers in 438 patients. Techniques to minimize possible complications are emphasized.

### Technique

A retrospective review of permanent transvenous cardiac pacemakers (not related to other cardiac surgery) implanted by one surgical group during a three year period (1977-79) was performed. All patients in this series were referred by a cardiologist. Those patients who were clinically unstable had a temporary bipolar pacemaker inserted preoperatively, usually via the femoral vein. The procedure was performed electively after optimal stabilization was obtained. Antibiotics were given preoperatively and continued for 48 hours. Placement of the permanent endocardial lead was performed using an image intensifier fluoroscopy unit. A nurse anesthetist was in attendance to monitor the patient during the procedure.

After sterile prepping and draping, local anesthesia using 0.5 per cent lidocaine without epinephrine was used to infiltrate the skin and subcutaneous tissue over the right delto-pectoral groove. A transverse skin incision was made in this area, and the cephalic vein was isolated. If the cephalic vein was absent or too small to permit catheter passage, another vein was used. In the earlier part of the study, either the external jugular or left cephalic vein was used. In the latter period of this study the catheter introducer was available. If the cephalic vein could not be used, the subclavian vein was cannulated using the catheter introducer and the Seldinger technique. This avoided further dissection to isolate the external jugular vein on that side. Before the catheter introducer was available, the right cephalic

vein was cannulated in 70 per cent of cases; in 15 per cent the right external jugular vein was used; 13 per cent required insertion through the left cephalic vein; and 2 per cent required the left external jugular vein for placement.

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**Experience with a series of patients who have undergone insertion of permanent transvenous pacemakers is reviewed. Indications, technique, results, and complications are discussed.**

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Next, the subcutaneous pouch was prepared for the pulse generator and packed for hemostasis. The principal types of endocardial leads used in this series included the flange tip (Medtronic 6907) used in 80 per cent of cases, and the tine tip (Medtronic 6961) used in 20 per cent of cases. The endocardial lead was advanced under fluoroscopy using a stylet guidewire. It was passed through the pulmonary artery to confirm position and was then directed to the apex of the right ventricle. This position was visualized under fluoroscopy during respiration and coughing, and the lead was tested to assure no diaphragmatic stimulation. In the chosen position, pacing threshold measurements were checked using an external pacemaker system analyzer (Medtronic Model 5300). This was attached temporarily to the endocardial lead, pacing the patient above his own heart rate. An acceptable threshold was ideally less than one volt to capture with a resultant current greater than 1.5 ma (ideal resistance 500 ohms). An R-wave displacement of four volts or greater indicated a good position for sensing by the demand pulse generator.

The endocardial lead was then connected to a lithium unipolar demand pulse generator which

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TABLE I  
AGE AND SEX OF PATIENTS  
IN THIS SERIES

Age (years)	Number of Patients		Total (%)
	Male	Female	
30-39	5	*	6 ( 1%)
40-49	8	1	9 ( 2%)
50-59	20	2	22 ( 5%)
60-69	68	32	100 ( 23%)
70-79	94	90	184 ( 42%)
80-89	56	54	110 ( 25%)
90-99	3	4	7 ( 2%)
	254 (58%)	184 (42%)	438 (100%)

\* 1 month old infant with congenital heart block.

generated a 10 milliamp pulse at an interval of 800 milliseconds (72 beats/min) and a width of 500 milliseconds (Medtronic Mirel-VM 5983 and Mirel-VL 5989). After the endocardial lead had been secured to the vein with several heavy permanent ligatures, the pulse generator was placed in the subcutaneous pocket and secured in this position with permanent sutures. Pectoral muscle stimulation was avoided by correct orientation of the pulse generator. The wound was closed in layers, using polygalactin suture, avoiding wound drainage and skin sutures. Patients were continuously monitored for at least 24 hours postoperatively, and an EKG and chest X-ray were obtained the following morning.

## Results

Table I shows the age distribution of the patients. The average age was 74 years, and the majority of the patients were male in the 60-80 year age range. Postoperative hospital stay averaged 3.5 days. The most common diagnosis in these patients was intermittent or fixed complete heart block or sinus node dysfunction (Table II). Complications are listed in Table III. The most frequent complication was dislodgement of the electrode, and repositioning of the electrode was classified as early or late. A small number of leads required conversion to an epicardial lead via the sub-xiphoid or transthoracic approach (3.4%). No pulse generator (power pack) failure was seen during this time interval with the new lithium powered pulse generator. Several miscellaneous minor complications are listed. There were no surgical deaths.

TABLE II  
PREOPERATIVE DIAGNOSIS FOR WHICH  
PACEMAKER WAS REQUIRED

Diagnosis	No. Patients (%)
Complete heart block	205 ( 47%)
Sinus node dysfunction	178 ( 41%)
Atrial fibrillation with slow ventricular response	27 ( 6%)
Post acute myocardial infarction	15 ( 3%)
Drug resistant ventricular arrhythmias	10 ( 2%)
Congenital heart block	3 ( 1%)
	438 (100%)

## Discussion

Symptomatic bradycardia due to complete heart block or sinus node dysfunction is the most common indication for cardiac pacing. Patients with these disorders are usually elderly and often have other major system disease. Since it can be performed at a low risk with local anesthesia, the transvenous endocardial approach to pacemaker implantation is favored in this patient population.<sup>8-11</sup> The safety of this technique is supported by the fact that there were no surgical deaths in our series, and major complications were few.

One major complication which can occur is cardiac perforation and tamponade,<sup>3, 4, 13</sup> which requires thoracotomy for drainage. This occurred in

TABLE III  
POSTOPERATIVE COMPLICATIONS FOLLOWING  
TRANSVENOUS PACEMAKER INSERTION  
IN 438 PATIENTS

Complication	No. Patients
Repositioning	
Early	41
Late	8
Converted to epicardial lead*	15
Pericardial tamponade requiring thoracotomy	4
Pulmonary embolus	2
Broken lead	1
Axillary vein thrombosis	1
Dressler's syndrome	2
Wound hematoma	3
Wound infection	1
Pectoral muscle stimulation	7

\* Subgroup of the 49 patients seen for repositioning.



four patients in our series (0.9%), and in all cases the large flange tip endocardial lead was employed. No tamponade has occurred with the new smaller tip endocardial leads now available. Gentleness while positioning with the guidewire in place is also essential. Perforation of the ventricular wall without tamponade, however, probably occurs more often than is recognized clinically. Perforation should be suspected in all cases of diaphragmatic stimulation.

The most common complication in this series was electrode dislodgement, which occurred in about 9 per cent of patients. This rate is comparable to other large series of transvenous pacemakers.<sup>4-6</sup> Dislodgement can occur early or late after pacemaker insertion.<sup>3, 4, 6, 13</sup>

Early dislodgement usually occurs within a few days postoperatively, and repositioning may be easily performed using local anesthesia. No deaths or serious complications resulted from early dislodgement in our series. These patients often have a dilated right ventricle, and if frequent repositioning is required then subxiphoid or transthoracic placement of an epicardial lead may be considered. More recently, multiple configurations of "active fixation" leads have become available. Among these designs are an alligator jaw lead, a lead that "screws" into the endocardium, and a tine tip with long flexible "arms" that intertwine with the myocardial trabeculae. Recent studies demonstrate that early dislodgement occurs less often when these "active fixation" leads are used.<sup>13, 14</sup>

Late dislodgement (which occurred infrequently) is more dangerous since the patient may re-develop symptoms or faint without prior warning. Late repositioning is usually required for other reasons. "Exit block"<sup>3, 5, 15</sup> (presumably due to fibrosis around the endocardial lead tip) causes an increase in pacing threshold. In these cases, there is no change in the position of the electrode on x-ray; but, when the pacemaker is explored and the endocardial lead is checked, an increased pacing threshold and a decreased sensing threshold are found. Electrode malfunction is another reason for late repositioning. One example is lead wire fracture, but this occurred only once in our series. Lead wire fracture is more frequently seen with epicardial leads from the constant motion of the lead with contraction of the ventricle.<sup>12, 13</sup>

Only one wound infection occurred in our series. Wound complications such as hematoma, infection, or skin erosion by the endocardial lead can be minimized using good surgical technique.<sup>2, 5, 8, 15</sup>

Infection is disastrous and requires removal of the entire endocardial lead and placement of the pace-

maker through a separate route. Wound complications should occur less often with the availability of the catheter introducer, since less dissection will be required. Pectoral muscle stimulation, if severe and annoying to the patient, may require wrapping the pulse generator in a nonconductive material.

A low initial pacing threshold and low resistance are the most important objectives during positioning of the endocardial lead.<sup>5, 6, 16</sup> An inadequate position or change in the position of the pacemaker electrode will increase the pacemaker threshold. This causes increased drain of the pulse generator power supply, leading to early battery failure. "Exit block" due to a high threshold was uncommon in this series. Pulse generator malfunction may also occur,<sup>3-5</sup> but there were no circuitry failures seen in our series when the lithium powered pulse generator was used. The life span of the new lithium pacemaker may reach eight to ten years.<sup>17</sup> The new pacemaker designs are also more comfortable to the patient. For example, present dimensions for the Medtronic Mirel-VM Model 5983 include 53 mm diameter, 15 mm thickness, with a weight of 60 gm.

## Summary

Permanent cardiac pacemakers improve the quality and length of survival in patients who have a diagnosis of complete heart block. Using the transvenous route, local anesthesia and endocardial leads, complications of general anesthesia and a thoracotomy can be avoided in this high-risk patient group. It is emphasized that there were no surgical deaths in this series. Recent improvements in equipment include the lithium powered pulse generator, new types of endocardial leads, and the catheter introducer. These items allow easy placement of the pacemaker through a single operative incision, and further experience should decrease the incidence of dislodgement and late pacemaker failure.

## References

1. Green, G. D. *et al.*: A four year review of cardiac pacing in Glasgow. *Am. Heart J.* 83:265, 1972.
2. Furman, S. *et al.*: Implanted transvenous pacemakers. *Ann. Surg.* 164:465, 1966.
3. Amikam, S. *et al.*: Long term survival of elderly patients after pacemaker implantation. *Am. Heart J.* 91:445, 1976.
4. Bernstein, V. *et al.*: Permanent pacemakers: Eight year followup study. *Ann. Intern. Med.* 74:361, 1971.
5. Sowton, E. *et al.*: Ten-year survey of treatment with implanted cardiac pacemaker. *Br. Med. J.* 3:155, 1974.
6. Conklin, E. F. *et al.*: Four hundred consecutive patients with permanent transvenous pacemakers. *J. Thorac. Cardiovasc. Surg.* 69:1, 1975.

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# Infant Feeding Practices

## The Effect on Six Month Weight

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CURRENT recommendations for infant feeding are that beikost not be added until five to six months of age.<sup>1-2</sup> The early feeding of beikost has been associated with overfeeding and the development of infantile obesity.<sup>3-4</sup> Dr. Fomon has stated that "our major objection to the introduction of beikost before five months of age is based on the possibility that it may interfere with establishing sound eating habits and contribute to overfeeding."<sup>1</sup>

In contrast, Davies (1977)<sup>5</sup> followed 821 infants who were bottle fed for three months. He compared those who started solids before six weeks with a group given solids between six weeks and three months and a group given no solids for three months. There were no significant differences between the groups in mean weight gain and linear growth per week. DeSwiet<sup>6</sup> followed 758 infants for six months and found no significant differences in six week or six month weight whether the infants were bottle or breast fed or whether they received solids. He did not correlate six month weight with birth weight or height.

This study was undertaken to see if we could demonstrate in our clinic population any significant differences in six month weight between compliant

patients (those given no beikost prior to five months) and non-compliant patients (those who received beikost prior to five months) when taking into consideration the correlation with birth height and weight and six month height.

### Patients and Methods

A total of 202 full term normal infants born to the Ambulatory Care Service of Wesley Medical Center

**Full term normal infants were followed monthly and heights and weights were recorded. At six months, there were no significant differences between weight of infants receiving only formula and those receiving solid foods when correlated with birth weight, birth height, and six month height.**

were entered into the study. Of those only 77 infants were thought to have data accurate and complete enough for evaluation. The remaining 125 infants did not return to the clinic for a six month visit or were unavailable for followup. A feeding instruction sheet was given to each mother in the hospital following delivery (Figure 1). A nurse clinician or physician reviewed these instructions with the mother prior to discharge. Each infant was followed monthly in the clinic, and heights and weights were recorded, feeding history obtained, and feeding instructions were given. The compliant group consisted of those infants fed only formula with iron or breast milk for at least five months. The non-compliant group consisted of those infants given beikost prior to five months of age regardless of milk source.

The data were analyzed using chi-square and t tests to determine if significant differences existed between the compliant and non-compliant groups in demographic characteristics, milk source, birth weight, birth height, six month weight, and six month height. In addition a stepwise regression analysis was done using six month weight as the dependent variable.

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*Formula or breast milk only for the first 5-6 months.* This is different from what we used to say several years ago, but we have learned a lot about babies' needs since then. It appears now that we are doing no good and perhaps some harm by introducing other foods early. All the calories, vitamins, and minerals a baby needs in the first six months are in formula or breast milk. Babies who get other foods spit up more, have more allergic reactions, more diarrhea, more colds, sometimes get too fat and often don't grow as well. Also the feeling that a baby will sleep through the night better with a little added cereal is an old wives' tale. Babies sleep through the night when they are ready. So we encourage you not to give other foods or juices until 5-6 months.

Figure 1. Excerpt from Feeding Instructions at birth.



TABLE I  
DEMOGRAPHIC CHARACTERISTICS OF COMPLIANT AND NON-COMPLIANT FEEDING GROUPS

	<i>Compliant (%)</i>	<i>Non-compliant (%)</i>	<i>Total (%)</i>	
	29 (38)	48 (62)	77 (100)	—
Black	11 (38)	25 (52)	36 (47)	NS
White	16 (55)	21 (44)	37 (48)	NS
Other	2 (7)	2 (4)	4 (5)	NS
Medicaid	18 (62)	34 (71)	52 (68)	NS
Mother's age	22 (15-43) range	20.8 (15-31) range		NS
Father's age	25 (17-57) range	22.6 (16-38) range		NS
Grandmother in home	11 (38)	19 (40)	30 (39)	NS
in town	11 (38)	18 (38)	29 (38)	NS
neither	7 (24)	11 (22)	18 (23)	NS
Father in home	10 (34)	14 (29)	24 (31)	NS
Older children in home	12 (41)	22 (46)	34 (44)	NS
Received nutrition sheet	29 (100)	39 (81)	68 (88)	p < .05

NS — Not significant.

## Results

Twenty-nine infants comprised the compliant group, and 41 infants were non-compliant. The demographic characteristics of the two groups are shown in *Table I*. There were no significant differences between the groups for race, financial status, maternal or paternal age, presence of a grandmother in the home or in town, the stability of the marriage, or the presence of older children. It was significant ( $X^2 = 4.47$ ,  $p < .05$ ) that those who received the nutrition sheet were more compliant. Of the nine in the non-compliant group who stated they did not receive the nutrition sheet, seven were checked by the nurse clinician or physician as having been given the sheet in the hospital.

Of the 29 who were compliant, only eight (28%) breast fed the entire six months (*Table II*). Those who breast fed were significantly more compliant

than those who did not ( $X^2 = 15.6$ ,  $p < .005$ ). Nine (19%) of the non-compliant group switched to whole cow's milk prior to six months.

The month in which non-compliance occurred is shown in *Table III*. By four months of age, 60 per cent of the entire study group were non-compliant, and 30 per cent had been given beikost even by two months of age in spite of instructions not to do so.

TABLE II  
MILK SOURCE IN COMPLIANT AND NON-COMPLIANT FEEDING GROUPS

	<i>Compliant (%)</i>	<i>Non-compliant (%)</i>	<i>Total (%)</i>
Breast started	12 (41)	7 (15)	19 (25)
six months	8 (28)	1 (1)	9 (12)
Formula with iron	17 (59)	41 (85)	58 (75)
started	21 (72)	38 (79)	59 (77)
six months			
Whole milk at	0	9 (19)	9 (12)
six months			

TABLE III  
MONTH NON-COMPLIANCE IN FEEDING OCCURRED

<i>Month</i>	<i>Number</i>	<i>% of Total</i>
One	9	12
Two	14	30
Three	8	40
Four	15	60
Five	2	62

TABLE IV  
MEAN GROWTH IN COMPLIANT FEEDING GROUP BY MILK SOURCE

<i>Milk Source</i>	<i>Birth Weight</i>	<i>Birth Height</i>	<i>6 Mo. Weight</i>	<i>6 Mo. Height</i>
Formula with iron (21)	3.16 kg	49.2 cm	7.63 kg	66.3 cm
Breast (8)	3.10 kg	49.4 cm	6.98 kg	65.9 cm

TABLE V  
MEAN GROWTH OF COMPLIANT AND NON-COMPLIANT GROUPS (ALL MILK SOURCES)

	<i>Compliant</i>		<i>Non-compliant</i>	
	FEMALE (15)	MALE (14)	FEMALE (21)	MALE (27)
Birth weight	2.94 kg	3.28 kg	3.00 kg	3.36 kg
Birth height	48.6 cm	49.8 cm	48.0 cm	49.9 cm
6 mo. weight	7.16 kg*	7.88 kg†	7.31 kg*	7.89 kg†
6 mo. height	65.6 cm	67.3 cm	65.2 cm	67.7 cm
* NS				
† NS				

In the compliant group (*Table IV*) there is no significant difference in the six month weight of breast vs formula fed infants when correlated with six month height and birth weight and birth height even though the mean six month weight of the breast fed infants is less than those on formula with iron. The sample size is small and includes two breast fed failure to thrive infants who were below the fifth percentile for weight/height ratio at six months.<sup>7</sup>

Within the compliant group, there were also seven infants (24%) who were obese by Dr. Fomon's tentative definition<sup>8</sup> and who had a weight/height ratio greater than the 90th percentile.<sup>7</sup> Five of these were females and two were males. Six of the obese infants were bottle fed and one was breast fed.

Among non-compliant infants there were eight obese infants (17%), four males and four females. One infant was a failure to thrive.

When six month weight for compliant and non-compliant groups from all milk sources is compared by sex, there is no significant difference (*Table V*). Males were slightly heavier at birth and at six months than females.

In order to limit the number of variables, the data were analyzed using only the infants who were formula fed from birth (*Table VI*). No significant differ-

ence in six month weight was found between compliant and non-compliant groups by sex. The step-wise regression analysis found only six month height and birth weight as good predictors of six month weight. Variables not found to be significant were birth height, sex, or patient compliance.

### Discussion

No differences were found between compliant and non-compliant groups with respect to financial status, race, number of previous children who were generally given beikost early, presence of grandmother in the home or nearby to give advice, or presence of the father in the home. We expected compliance to be affected by a number of these factors but found no correlation. Those who found breast feeding to be a satisfying experience and continued it throughout the six months appeared to be less eager to start solids early.

In our clinic population we found no significant increase in six month weight regardless of infant feeding practice. The study was terminated early due to change of personnel in the clinic, and therefore sample size is small. The early addition of beikost seemed to have little effect on the overall weight at six months. We did look at the month of non-

TABLE VI  
MEAN GROWTH OF COMPLIANT AND NON-COMPLIANT GROUPS (FORMULA FED ONLY)

	<i>Compliant</i>		<i>Non-compliant</i>	
	FEMALE (8)	MALE (8)	FEMALE (14)	MALE (16)
Birth weight	2.85 kg	3.47 kg	3.09 kg	3.40 kg
Birth height	48.0 cm	50.3 cm	48.4 cm	49.8 cm
6 mo. weight	7.02 kg*	8.23 kg†	7.42 kg*	8.12 kg†
6 mo. height	64.8 cm	67.8 cm	66.9 cm	68.1 cm
* NS				
† NS				



compliance and found that this also had no effect on the six month weight.

Obesity at six months had no relationship to any mode of infant feeding since obese infants were found in both groups. It would have been difficult to assess accurately caloric intake in our two groups; however, one must speculate that if obesity is related to excessive caloric intake<sup>7</sup> overfeeding can occur and does occur in our study irrespective of infant feeding practice. It is possible that a different trend may have emerged with a larger sample size. This study should not be taken to construe that it makes no difference what feeding practices are recommended. There were no advantages achieved in growth at six months by adding beikost early and no disadvantages to adding beikost at five to six months of age.

### Summary

In a limited study in a clinic population, neither early nor late feeding of beikost had an effect on the six month weight when the correlation with birth weight, birth height, and six month height was considered.

### Acknowledgement

Regina Barnett, M.A., Coordinator of Curriculum Research Activities, UKSM-Wichita, provided statistical analysis.

### References

1. Fomon, S. J.; Filer, L. J.; Anderson, T. A. and Ziegler, E. E.; Recommendations for feeding normal infants. *Pediatrics* 63:52, 1979.
2. Committee on Nutrition: On the feeding of supplemental foods to infants. *Pediatrics* 65:1178, 1980.
3. Shukla, A.; Forsyth, H. A.; Anderson, C. M. and Marwah, S. M.: Infantile overnutrition in the first year of life: A field study in Dudley, Worchestershire. *Br. Med. J.* 2:507, 1972.
4. Taitz, L. S.: Infantile overnutrition among artificially fed infants in the Sheffield region. *Br. Med. J.* 1:315, 1971.
5. De Swiet, M.; Fayers, P. and Cooper, L.: Effect of feeding habit on weight in infancy. *Lancet* 1:892, 1977.
6. Davies, D. P. *et al.*: Effects of solid foods on growth of bottle-fed infants in first three months of life. *Br. Med. J.* 2:7, 1977.
7. National Center for Health Statistics: NCHS Growth Charts, 1976.
8. Fomon, S. J.; Ziegler, E. E. and O'Donnell, A. M.: Normal growth, failure to thrive and obesity. *Infant Nutrition*, 2nd Ed. (Fomon, S. J. ed.). Philadelphia, W. B. Saunders, p. 85, 1974.

### A New Technique

(Continued from page 392)

group of 105 were operated without decompression. In the group receiving PTBD the operative mortality rate was 8 per cent while the second group had an operative mortality rate of 28 per cent. Operative mortality rate was noted to be particularly high in patients with serum total bilirubin greater than 10 mg/dl.<sup>2</sup>

### Summary

Percutaneous transhepatic biliary drainage is an effective method to decompress the biliary tree, successful in approximately 95 per cent of patients. It is a safe procedure with the most common complications — fever and cholangitis — being easily managed. Applications of this relatively new technique include drainage of the biliary tract in obstructing malignancy, ascending cholangitis, benign strictures, and in preparing jaundiced patients for definitive surgical treatment. PTBD as a preoperative resuscitative measure promises to be an important and valuable technique to enhance the effectiveness and safety of biliary surgery.

### References

1. Molnar, W. and Stockum, A. E.: Relief of obstructive jaundice through percutaneous transhepatic catheter — A new therapeutic method. *Am. J. Roentgenol. Radium Ther. Nucl. Med.* 122:356-367, 1974.
2. Nakayama, T.; Ikeda, A. and Okuda, K.: Percutaneous transhepatic drainage of the biliary tract: Techniques and results in 104 cases. *Gastroenterology* 74:554-559, 1978.
3. Hoevels, J.; Lunderquist, A. and Ihse, I.: Percutaneous transhepatic intubation of bile ducts for combined internal-external drainage in preoperative and palliative treatment of obstructive jaundice. *Gastrointest. Radiol.* 3:23-31, 1978.
4. Ferrucci, J. T., Jr.; Mueller, P. R. and Harbin, W. P.: Percutaneous transhepatic biliary drainage: Technique, results and applications. *Radiology* 135:13, 1980.
5. Pereiras, R. V., Jr. *et al.*: Relief of malignant obstructive jaundice by percutaneous insertion of a permanent prosthesis in the biliary tree. *Ann. Intern. Med.* 89:589-593, 1978.
6. Tylen, U.; Hoevels, J. and Vang, J.: Percutaneous transhepatic cholangiography with external drainage of obstructive biliary lesions. *Surg. Gynecol. Obstet.* 144:13-18, 1977.
7. Hansson, J. A. *et al.*: Clinical aspects of nonsurgical percutaneous transhepatic bile drainage in obstructive lesions of the extrahepatic bile ducts. *Ann. Surg.* 189:58-61, 1979.
8. Pollock, T.W. *et al.*: Percutaneous decompression of benign and malignant biliary obstruction. *Arch. Surg.* 114:148-151, 1979.

# Exercise-Induced Anaphylaxis

## A Case Report

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### Case Report

A 14-YEAR-OLD MALE in excellent health was just finishing a six-mile cross-country run when he began itching and developed urticaria. He complained that he couldn't see and fell to the ground. He was brought to the emergency room of Susan B. Allen Memorial Hospital in El Dorado. On arrival at the emergency room he was conscious, erythematous as if severely sunburned, and quite diaphoretic. There was no perceptible pulse or blood pressure. Heart sounds were faint but regular; respirations were shallow without wheezing. He was treated with oxygen, 0.3 cc of 1:1000 epinephrine intravenously and 0.4 cc subcutaneously, and 250 mg of hydrocortisone sodium succinate intravenously. Within ten minutes, pulse was 92, blood pressure was 110/70, and the skin redness was fading. Within two hours he seemed perfectly normal. There was no history of allergy in the patient nor in his family, except mild seasonal hay fever in the mother. There was no history of exposure to suspected antigens.

### Discussion

Exercise induced anaphylaxis was described by Sheffer and Austin in 1980.<sup>1</sup> They define the syndrome as the exertion-related appearance of cutaneous pruritis and warmth, the development of generalized urticaria, and the appearance of such additional manifestations as syncope, abdominal colic, and upper respiratory tract distress. The hives are usually 1 cm in diameter. A few have had small hives of about 2 mm diameter. The clinical presentation is quite similar to that of allergen-induced anaphylaxis.

The differential diagnosis of exercise-related symptoms in an apparently healthy person should include cardiac arrhythmias, exercise-induced asthma, and cholinergic urticaria, as well as exercise-induced anaphylaxis. Generalized cholinergic or heat urticaria is characterized by small punctate wheals surrounded by an erythematous flare associ-

ated with exercise, hot showers, sweating, and anxiety. This syndrome may be differentiated from exercise-induced anaphylaxis by the history, the size of the hives, and the associated symptoms. Patients with exercise-induced anaphylaxis do not give a history of symptoms during hot baths or showers or fevers. The hives of cholinergic urticaria are charac-

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**A case of life-threatening exercise-induced anaphylaxis in a 14-year-old male is reported. Presenting symptoms and treatment are similar to those of allergen-induced anaphylaxis.**

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teristically very small, although these tiny hives are also occasionally seen in exercise-induced anaphylaxis. The systemic symptoms of syncope and abdominal pain, typical of exercise-induced anaphylaxis, are uncommon in cholinergic urticaria.

The cause of exercise-induced anaphylaxis remains obscure. A group of four patients with exercise-induced anaphylaxis have been found to have elevated blood histamine levels shortly after the onset of symptoms. Complement levels were evaluated in two of these patients and found to be normal.<sup>2, 3</sup>

One interesting aspect of exercise-induced anaphylaxis is that it occurs in an irregular fashion, *i.e.*, it does not occur with each episode of exercise. This suggests the influence of other variables in addition to exercise, but these have not yet been determined.

The treatment recommended by Sheffer is similar to that of allergen-induced anaphylaxis.<sup>4</sup> The acute attack should be treated with epinephrine; oxygen, vasoactive drugs, and fluid replacement are necessary for persistent hypotension. Antihistamines will relieve the cutaneous manifestations. Prophylactic measures include avoiding exercise for four hours after a meal, administration of antihistamines, carrying a syringe pre-loaded with epinephrine, and exercising with a companion capable of recognizing the syndrome and injecting the epinephrine subcutaneously.

*(Continued on page 412)*

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## Current COMMENT

H. B. LINDSLEY, M.D., *Editor*

### *Acute Renal Failure: Classification and Pathophysiology*

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ACUTE RENAL failure can be defined as an abrupt, often reversible reduction in renal function usually associated with oliguria or anuria. Acute renal failure is more frequently seen in progressive azotemia and urine volumes less than 400 ml/day. In concert with the reduction in urine flow, the serum creatinine concentration increases about 0.5-1.0 mg/100 ml/day whereas the blood urea nitrogen (BUN) concentration might vary considerably. Marked alterations in serum potassium concentrations, calcium and phosphorous metabolism, and acid base balance are also common.

The acute renal failure syndrome previously was known as acute tubular necrosis; however, histological evidence for this is not always observed. A functional defect of the nephron is the predominant alteration making acute renal failure the more appropriate term. In a review of 2,200 cases, 43 per cent occurred in surgical patients; 9 per cent in individuals with severe trauma; 26 per cent in patients with various medical conditions; 13 per cent were related to pregnancy; and 9 per cent were considered due to nephrotoxic agents. In recent years more nephrotoxic agents have been identified and appear, at least in the clinical setting, to play a predominant role in inducing acute renal failure. Classification and some common causes are shown in *Table I*.

#### **Renal Function Tests**

Renal function tests useful in evaluating acute

renal failure are shown in *Table II*.

Simplistic approaches in classifying the causes of acute renal failure can be grouped into three categories: prerenal, intrarenal, and postrenal.

*Prerenal azotemia* occurs in conditions associated with severe impairment of renal perfusion or resistance. Under normal circumstances, the kidneys receive 20-25 per cent of the cardiac output. This represents a total renal blood flow of 1000-1200 ml/min. With moderate alterations in systemic pressure, blood volume and peripheral resistance, the kidneys exhibit a remarkable capacity for auto-regulation of renal blood flow, glomerular filtration, and maintenance of function. With severe decrease in effective circulating blood volume and an increase in resistance, kidneys are unable to maintain normal function.

Many extrarenal events can lead to reduction in renal function. Hypovolemia due to hemorrhage, diarrhea, vomiting, fluid losses due to burns, excess sweating or heat stroke, and renal losses due to diuretic abuse or salt wasting nephropathy can produce prerenal azotemia. Problems of cardiovascular origin include myocardial pump failure, pericardial tamponade, and pooling of blood into peripheral vasculature. In these circumstances, oliguria is commonly noted and the BUN/creatinine ratio is usually greater than 15:1 because of a greater reduction in urea clearance which is partly urine flow dependent. Creatinine clearance is not flow dependent. Glomerular filtration rate (GFR) and renal blood flow are reduced. Urine osmolality is elevated and the urine-to-plasma creatinine ratio is greater than 40:1. Additionally, the fractional excretion of sodium [(U/P) Na/(U/P) creatinine] is less than 1 per cent.

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TABLE I  
CLASSIFICATION OF ACUTE RENAL FAILURE

*Prerenal Failure*

- Hypovolemia, *e.g.* hemorrhage
- Gastrointestinal losses — diarrhea, vomiting
- Skin losses — burns, sweating, heat stroke
- Renal losses — diuretic abuse, salt-wasting nephropathy
- Cardiovascular failure — myocardial failure, pericardial tamponade, vascular pooling

*Postrenal Failure*

- Urethral obstruction — stricture, bladder neck obstruction, prostatic hypertrophy, carcinoma of bladder
- Function obstruction of bladder — neuropathy, ganglionic blocking agents
- Ureteral obstruction — retro-peritoneal fibrosis, stones, sulfonamide and uric acid crystals, blood clots, accidental ligation of ureters during pelvic surgery

*Intrarenal Failure*

*Intrinsic Renal Disease*

- Glomerulonephritis and/or vasculitis
  - Acute post-streptococcal glomerulonephritis
  - Polyarteritis nodosa
  - Rapidly progressive glomerulonephritis
  - Goodpasture's syndrome
  - Hemolytic-uremic syndrome
  - Malignant hypertension
  - Renal transplant rejection
  - Systemic lupus erythematosus
  - Henoch-Schonlein purpura
  - Serum sickness
  - Scleroderma
  - Drug related vasculitis
  - Postpartum acute renal failure

*Interstitial nephritis*

- Secondary to infection
- Hypercalcemia
- Radiation
- Drug related, *e.g.* methicilin
- Myeloma kidney

*Acute fulminating infection*

- Papillary necrosis
- Pyelonephritis

*Renal vascular disease*

- Embolism
- Thrombosis
- Dissecting aneurysm

*Hemodynamically medical acute renal failure*

- Major surgery — aortic surgery
- Obstetrical — septic abortion, placenta previa, abruptio placenta
- Trauma — crush injury
- Pigment release — hemoglobin and myoglobin

*Acute nephrotoxic renal failure*

- Heavy metals — mercury, cadmium, uranium
- Organic solvents — carbon tetrachloride
- Glycols
- Antibiotics
- Pesticides
- Miscellaneous — methoxyflurane, radio-contrast agents

TABLE II  
TESTS USEFUL IN EVALUATING RENAL FUNCTION

<i>Test</i>	<i>Interpretation</i>
Urine volume	Greater than 600 ml/day
Urine sodium concentration ( $^U\text{Na}$ )	Normally varies with dietary intake of sodium
Urine osmolality	800-1200 mOsm/kg
Serum BUN-creatinine ratio	15 : 1. Urea clearance is flow dependent, therefore the ratio will change if urine flow is reduced.
Urine to plasma creatinine ratio	40 : 1. Creatinine clearance is dependent on intact function nephron.
Fractional excretion of sodium $\text{FeNa}$ $\frac{(\text{U/P}) \text{Na}^+}{(\text{U/P}) \text{Creatinine}} \times 100$	Fraction of filtered sodium excreted in the urine. Normally this value is less than 1%.
Ultrasound	Evaluation of size of kidney and collecting system
$^{99\text{m}}\text{Tc}$ Technetium	Measure of renal blood flow
$^{131}\text{I}$ -Hippuran	Measure of tubular function

Prerenal azotemia may be confused with oliguric acute renal failure in a few conditions where urine sodium concentration and osmolality do not reflect the underlying circulatory abnormalities. Patients with liver disease may not show the expected BUN elevation because of a reduced capacity to synthesize urea. Patients with underlying chronic renal disease may not be able to reduce urinary sodium excretion. Urine osmolality may not increase as much as might be expected in patients with vasopressin deficiency despite severe volume depletion.

Recognition of prerenal azotemia is fairly simple from clinical and laboratory evaluation. Since prerenal azotemia is reversible it should be diagnosed and treated early. A transition from functional impairment to organic damage to the kidney may occur in cases left untreated for a prolonged period. Factors responsible for such a transition are undetermined at present. Transition to intrarenal azotemia can often be prevented with early and appropriate therapy.

*Postrenal failure* occurs in clinical states where there is obstruction to urine flow. This type of acute renal failure is reversible if detected at an early stage. It is therefore imperative to consider postrenal



failure in any acute renal failure patient. Anuria or anuria alternating with polyuria are diagnostic clues. Total anuria followed by a period of hours of polyuria with subsequent redevelopment of anuria is common in obstructive uropathy; this cycle may repeat itself. Renal colic or flank pain are valuable historical points in diagnosis. Unilateral impairment of renal function, whether due to ureteral obstruction or as a consequence of arterial or venous problems, is invariably associated with adaptive changes in the remaining kidney. Symptoms of these patients may be flank pain and renal colic. There are no or minimal alterations in renal function measured by BUN and serum creatinine. Patients with solitary kidney or marked impairment in functional reserve of the opposite kidney due to underlying renal disease will develop azotemia if the obstruction affects the functional kidney.

Postrenal failure may be caused either by urethral or bladder neck obstruction or by bilateral ureteral obstruction which can be intrinsic or extrinsic. Anuria may also develop due to edema and obstruction of the ureterovesicular orifices following bilateral retrograde ureteral catheterization. Ganglionic blocking agents and antihistamines may precipitate acute urinary retention in patients who were well with previously compensated bladder function. Other causes of obstructive uropathy include functional obstruction due to neuropathy — *e.g.* diabetic neuropathy — and obstruction due to stones or blood clots or accidental ligation of the ureter during surgery.

In contrast to acute obstruction, prolonged urinary obstruction is associated with renal vasoconstriction and decreased renal blood flow. This decrease in renal blood flow has the effect of adding a potential ischemic component to the mechanical effects of obstruction and may play an important role in resultant renal functional impairment.

Obstructive uropathy must be excluded in any patient with acute renal failure or in any patient with marginal insufficiency who for unknown reasons develops rapid deterioration in renal function. Treatment consists of early relief of the obstruction and proper management of fluid and electrolyte balance.

*Intrarenal Disease.* As shown in *Table I*, many intrinsic renal diseases can cause acute renal failure. The largest groups of these include the major types of glomerulonephritis and renal vasculitis: post-streptococcal glomerulonephritis, systemic lupus erythematosus, polyarteritis nodosa, Schoenlein-Henoch purpura, subacute bacterial endocarditis, rapidly progressive glomerulonephritis, Goodpasture's syndrome, serum sickness, hemolytic uremic

syndrome, malignant hypertension, scleroderma, drug related vasculitis, and postpartum acute renal failure. The majority of these disorders are thought to be diseases in which immunological mechanisms play an important role. In many, circulating immune complexes may be trapped in the glomerular capillary basement membrane. In Goodpasture's syndrome an antibody is formed against certain antigenic sites on the glomerular basement membrane (anti-GBM antibody), ultimately destroying it. Involvement of the glomerulus in the disease process probably reduces the amount of surface area available for filtration in addition to altering the permeability characteristics of the glomerular capillaries. This results in a reduced glomerular filtration rate. Renal blood flow is also diminished in these conditions for unknown reasons.

Some conditions thought to be due to intrinsic renal disease are not associated with abnormalities in the immune system. Scleroderma and malignant hypertension are primarily associated with abnormalities in medium to small size vessels in the kidney. Secondary to alterations in blood flow, the glomeruli undergo ischemic change with resulting decrease in glomerular filtration.

Causes of interstitial nephritis include infection, drug toxicity and allergic reactions (*e.g.*, methicillin), hypercalcemia, myeloma renal involvement, and radiation nephritis. The pathophysiologic mechanisms involved in interstitial renal disease are poorly understood. Bilateral papillary necrosis due to acute fulminating infections and prolonged analgesic abuse may cause a reduction in renal function. Recent reports of acute renal insufficiency induced by prostaglandin synthetase inhibitors such as indomethacin and ibuprofen are also of interest.

Primary vascular problems can cause acute renal failure if the lesions are bilateral or occur in a solitary functioning kidney. Examples include thromboembolic kidney disease, dissecting aneurysms above the renal artery, and renal vein thrombosis. There are numerous causes of primary renal disease presenting with acute renal failure syndrome. Distinguishing among these various disorders is essential since appropriate treatment differs according to the cause of the primary renal abnormality.

### Pathophysiology

Because of the complex and complicated course of acute renal failure in the clinical setting, many investigators have turned to various laboratory models of acute renal failure to delineate the factors playing roles in the pathogenesis of this syndrome. From these studies our knowledge of the pathophys-

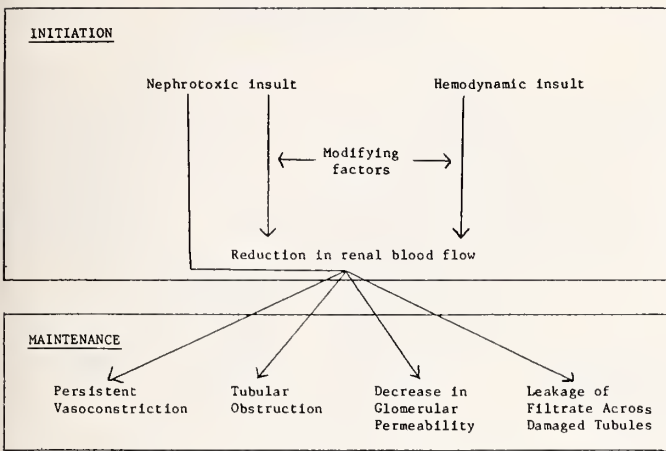


Figure 1. Pathogenesis of Acute Renal Failure.

iology has been greatly enhanced during the last several years. As shown in Figure 1, the pathogenesis of acute renal failure can be separated into two parts: initiation and maintenance.

**Initiation.** Causative factors in initiation of acute renal failure are numerous. The first insult seems to be related to a hemodynamic event or to a direct toxic effect on the kidney.

In 1945, Goormaghtigh suggested involvement of the juxtaglomerular apparatus, which produces renin, in the pathogenesis of acute renal failure. Elevated plasma renin activity in early stages supports this hypothesis. Predominant support stems from experimental studies of various models in which long term saline loading protects against development of acute renal failure. Chronic salt loading results in a marked reduction in renal renin content. In spite of numerous studies implicating the renin angiotensin system, recent data regarding agents that block the action of renin and angiotensin have not confirmed an important role for these substances. Administration of angiotensin II inhibitors or immunization against renin does not protect against the development of acute renal failure. The renin released may have a major effect on the renal vasculature at the local site of release independent of circulating angiotensin. The protection by salt loading may be unrelated to the suppression of the renin angiotensin system. Chronic salt loading will decrease renal resistance and increase solute excretion. The role of other vasoactive substances such as prostaglandins and kallikrein in acute renal failure is uncertain.

**Maintenance.** Factors implicated in the maintenance of renal failure are shown in Figure 1. Others suggested in maintaining acute renal failure are tubuloglomerular feedback, redistribution of renal blood flow, altered renal vascular reactivity, and cellular swelling.

**Persistent Renal Vasoconstriction.** Renal vascular resistance has been shown by many experimental studies to be increased in both initial and maintenance phases of acute renal failure. Segmental increase in resistance, specifically of afferent arterial vasoconstriction, has been suggested as one factor. An increase in preglomerular resistance without a comparable change in postglomerular resistance would cause a severe fall in glomerular pressure, the driving force for filtration. Recent experiments, however, suggest segmental alterations in renal resistance do not occur in some forms of acute renal failure. Although persistent renal vasoconstriction seems to occur following renal failure, the role of this factor in maintaining renal functional impairment is not clearly known.

**Tubular Obstruction.** Tubular obstruction seems to be an important factor in both initial and maintenance phases of some forms of acute renal failure. Tubular obstruction is thought to occur secondary to the formation of casts containing desquamated necrotic debris from the tubular cells. Direct measurements of tubular pressures in various experimental models of acute renal failure have shown both normal and elevated intratubular pressures. Functional and histopathological studies also suggest the role of tubular obstruction in maintenance of acute renal failure. Thus, evidence suggests tubular obstruction as an important component of renal functional impairment.

**Back Leakage of Filtrate.** Evidence supporting leakage of filtrate across damaged tubular epithelium in maintenance of acute renal failure comes from several experimental studies. Intravenously injected lissamine green has been shown to cross the tubular epithelium. Radiolabeled inulin leaks from the tubular fluid suggesting that back leakage of filtrate may play some role in the maintenance of renal failure.

**Decreased Glomerular Permeability.** Histopathologic examination of biopsy material from patients with acute renal failure has not shown discernible ultrastructural alterations in glomerular capillaries by light microscopy. Because of this, very little attention was paid to the possibility of primary alteration in glomerular permeability characteristics. More recent studies demonstrate both histopathological and functional alterations of glomerular permeability. Recent studies in our laboratories have shown a very interesting phenomenon in glomerular permeability. Immediately after ischemic insult to the kidney, the permeability remained normal with a marked decrease in glomerular capillary permeability within 24 hours. These studies indicate altera-



tions in glomerular permeability are important in either generation or, probably more so, in the maintenance phase of acute renal failure.

In summary, acute renal failure can occur in a variety of clinical situations. Pathophysiologic events involved are multiple and complex. Further clinical and experimental studies will enhance our understanding of the factors that may initiate or maintain acute renal failure.

### Self-Assessment Questions

1. What is the fractional excretion of sodium in prerenal azotemia?
2. Hippuran scan evaluates which kidney function?
3. Which segment of renal vasculature is primarily involved in malignant hypertension?
4. Does glomerular capillary permeability change in acute renal flow?
5. What mechanism is thought to cause tubular obstruction?

(Answers on page 422)

### Cardiac Pacemakers

(Continued from page 402)

7. Johnson, R. A. *et al.*: Chronic overdrive pacing in the control of refractory ventricular arrhythmias. *Ann. Intern. Med.* 80:380, 1974.
8. Mansour, K. A. *et al.*: Cardiac pacemakers: Comparing epicardial and pvenous pacing. *Geriatrics* 28:151, 1973.
9. Stewart, S.: Placement of the sutureless epicardial pacemaker lead by the subxiphoid approach. *Ann. Thorac. Surg.* 18:308, 1974.
10. Tyers, G. F. O. *et al.*: The advantages of transthoracic placement of permanent cardiac pacemaker electrodes. *J. Thorac. Cardiovasc. Surg.* 69:8, 1975.
11. Brenner, A. S. *et al.*: Transvenous, transmediastinal, and transthoracic ventricular pacing. *Circulation* 49:407, 1974.
12. Parsonnet, V. *et al.*: The natural history of pacemaker wires. *J. Thorac. Cardiovasc. Surg.* 65:315, 1973.
13. Furman, S. *et al.*: Comparison of active and passive leads for endocardial pacing. *Pace* 2:417, 1979 and *Pace* 4:78, 1981.
14. Bisping, H. J. *et al.*: Three year clinical experience with a new endocardial screw-in lead. *Pace* 3:424, 1980.
15. Imparato, A. M. *et al.*: Electrode complications in patients with permanent cardiac pacemakers. *Arch. Surg.* 105:705, 1972.
16. Mansour, K. A. *et al.*: Further evaluation of the sutureless, screw-in electrode for cardiac pacing. *J. Thorac. Cardiovasc. Surg.* 77:858, 1979.
17. Burr, L. H.: The lithium iodide-powered cardiac pacemaker. *J. Thorac. Cardiovasc. Surg.* 73:421, 1977.

### Amniocentesis

(Continued from page 396)

normal infant, since there are many causes for fetal anomalies that cannot be detected by the procedure.

In conclusion, prenatal diagnosis for genetic disorders is safe, reliable, and strongly recommended for high-risk pregnancies.

### Acknowledgement

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### References

1. Golbus, M. S. *et al.*: Prenatal genetic diagnosis in 3,000 amniocenteses. *N. Engl. J. Med.* 300:150-163, 1979.
2. Simpson, N. E. *et al.*: Prenatal diagnosis of genetic disease in Canada: A report of a collaborative study. *Can. Med. Assoc. J.* 155:739-748, 1976.
3. Cutting the risk of childbirth after 35. *Consumer Report*, 302-306, May 1979.
4. NICHD National Registry for Amniocentesis Study Group: Mid-trimester amniocentesis for prenatal diagnosis: Safety and accuracy. *JAMA* 236:1471-1477, 1976.
5. Marshall, F. G. and Okley, G. P., Jr.: Interpreting elevated amniotic fluid alpha-fetoprotein levels in clinical practice: Use of the predictive value positive concept. *Am. J. Obstet. Gynecol.* 133(2):126-132, 1979.

### Exercise-Induced Anaphylaxis

(Continued from page 407)

### References

1. Sheffer, A. L. and Austen, K. F.: Exercise-induced anaphylaxis. *J. Allergy Clin. Immunol.* 66:106-111, 1980.
2. Lieberman, P. *et al.*: Exercise induced urticaria, angioedema, and anaphylaxis (abstract). American Academy of Allergy, March, 1981.
3. Kaplan, A. P.; Natbony, D. and Foster, W.: Severe cholinergic urticaria presenting as exercise induced anaphylaxis (abstract). American Academy of Allergy, March, 1981.
4. Sheffer, A. L.: A healthy athlete who collapsed after exercise. *J. Respir. Dis.* 2:51-57, 1981.

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## Drug INFORMATION

LINDA HOGAN, M.S., R.Ph., *Editor*

### *Monoamine Oxidase Inhibitors*

*Editor's Note:* The following drug information in question/answer format has been prepared by the Department of Pharmacy, UKSM-KC, and will continue as a monthly feature. The Department would welcome responses from physicians with suggestions as to desirable information to be included in the series.

**Question:** What is the mechanism of action behind the MAOI-cheese interaction?

**Answer:** The culpable substance in the drug-food interaction with monoamine oxidase inhibitors (MAOI) is tyramine. Tyramine, a pressor amine, is one of the physiologically active amines found in many foods. When tyramine is ingested, it is normally metabolized by the monoamine oxidase enzyme system in the gut and liver. In a patient on MAOI's however, tyramine is not metabolized and reaches the systemic circulation. Tyramine acts indirectly by displacing norepinephrine from the body storage sites. Massive release of norepinephrine is significant enough to cause myocardial infarction or cerebrovascular accident. The severity of the hypertensive episode is related to the amount of tyramine ingested. Usual symptoms include chest pain, severe throbbing headache, diaphoresis, tachycardia or bradycardia, and increased blood pressure.

Treatment of this type of hypertensive crisis is aimed at reducing the blood pressure. Once the blood pressure is decreased, relief of headache pain

usually follows. Intravenous phentolamine, an alpha adrenergic blocker, is recommended in these situations. Repeated doses of 2-5 mg are usually required to reduce the blood pressure.

Many foods contain tyramine. Charts listing the foods and drinks that may cause problems for the patient on MAOI therapy are available. Patients should be extensively counselled on diet restrictions when receiving a MAOI.

*Submitted by Joyce Generali, R.Ph.*

The Drug Information Service is maintained by the Department of Pharmacy at UKSM-KC to promote rational drug therapy. The Service is staffed by clinically oriented pharmacists with access to accurate, current, and unbiased information. Information is available free of charge to any health care practitioner involved with patient care. Contact:

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## *The President's Message*

My wife and I have been asked many times why we decided to practice in (of all places) Quinter, Kansas. Most of the time I tell them, "That's where we ran out of gas." Some believe it.

Actually, we responded to a need, as did many others graduating about that time. In the late 40s and early 50s there was a severe shortage of physicians in the rural areas of Kansas (as well as throughout the nation). Many communities, although quite capable of supporting several doctors, seemed simply unable to recruit them. Franklin D. Murphy, M.D., then Dean of the School of Medicine of the University of Kansas, proposed a three-point program as a solution. His plan consisted of: (1) increasing production of doctors and ancillary personnel; (2) encouraging communities to provide adequate office facilities at fair rental or rental-purchase; and (3) eliminating "medical isolation" by establishing short refresher courses at UKSM and bringing circuit courses to the practicing physicians at convenient locations throughout the state.

It worked!

Today, we are again faced with a similar problem of maldistribution of physicians and once more, I believe, we are about to witness a solution. The State Scholarship Program for medical students is now maturing. Some doctors will undoubtedly "buy out" of their obligation, but most will "pay back" by practicing in the State of Kansas. Although the law is not specific as to where in Kansas they must practice, I am confident that many will serve the



needy areas. As physician oversupply develops (as is projected by the experts) indeed, the rural and needy areas may suddenly become very attractive.

The University of Kansas Outreach Department has designed a plan called the UKSM — Community Assistance Program (CAP). Its purpose is to bring together the scholarship plan physicians and the communities seeking doctors. Its structure is similar to the present physician placement program. For details contact Joseph C. Meek, M.D. Director, Health Care Outreach and Continuing Education, UKSM-KC.

Fraternally,

*Herman W. Hiesterman M.D.*

*President*



## *The Brakes of the Game*

The family, it has been said (if not before, it was just now), is a microcosm of national or even global units since its relationships and problems can be likened, within their own context, to the catalog of characteristics in the larger scenes. Rather, we contend that the larger units are macrocosms of the family since they are outgrowths from it. The size and complexity of world problems may be greater but they are no more compelling or threatening — to the active parties — than those within the family. Prominent among these is financial solvency — perhaps a more pressing concern for the family since it is closer to bedrock and is denied much of the maneuvering and redefining of the rules that governments can rely on in stringent times.

But the family's more explicit knowledge of where it stands (once the installment plan duns and credit card bills are in), although it doesn't make the condition more enjoyable, does offer a certain security — perhaps akin to that reported in the drowning or freezing person who reportedly finds the situation not too bad once the outcome is accepted. On the other hand, the government seems often not to be sure of where it is. Witness the Social Security System and the debate as to whether or not it is on the rocks.

At any rate, both units are subject periodically to the reality of outgo exceeding income. In the case of the family, this usually results in the calling of the family council with the Voice of Authority announcing that something has to be done. At this stage of the process and this level of action, the process is known as economizing. In the larger units, where the situation has attracted much attention of late, it has followed the usual course of being labelled by a catch-title which is designed to mean the same thing but be more suitable to the organizational dignity than the plebeian form: cost containment.

While even casual scrutiny of the two levels of action can, of course, disclose numerous differences, they share a common structure and follow the same course. The first stage, which might be called the confession-repentance stage, has family members acknowledging their sins and (with varying degrees of sincerity and after a reasonable amount of maneuvering) arriving at the relative degrees of guilt and consequent requirements for economic absolution. There are resolutions of austerity but this is generally as far as the matter goes. There may or may not be recognizable implementation of the new plans but only in the direst of circumstances is the second phase entered. Beyond the immediate and superficial excesses amenable to immediate and superficial remedies, one runs into the problems of a more fundamental level in which only changes in life-style, attitude, and values can really alter the spending patterns.

So it is with the cost containment efforts on the organizational or governmental levels — and obviously we're working around to the particular involvement of medical practice in the process. The medical profession's activities, so often cited as lacking in social and economic responsibility, are no more or less prodigal than those of other segments of society — only shaped by the specifics of the medical function. There has rarely been any concerted effort to limit expenditures in patient care. In the first place, the area has been considered sacred from the crass monetary considerations that apply to other economic performances. After all, the effort is for the good of the patient and to withhold service in any sense because of expense has been unthinkable — or at least unmentionable. This is why, for example, it is considered necessary to raise physician awareness of drug and service costs to the level of curricular dignity in medical schools.



Beyond the immediate and more-or-less easily accomplished reductions, then, the organizational — or governmental — effort meets a central core of resistance comparable to that which strips the gears of the family effort: those basic philosophies and purposes that will permit economy only by basic and purposeful readjustments of principle. Here, the peculiar status of medical service poses a special problem as was exemplified — not intentionally, we are sure — in a recent article in *Discover* on the medical uses of the lasers. The article was appropriately restrained and qualified but, we expect, would leave a lay reader happy with the prospect of a great, possibly revolutionary, change in medical technique, particularly in the management of malignancies and of infertility in women. The expense of acquiring and maintaining the necessary equipment (although not the training and remuneration of personnel using it) was noted and the point was made that some routine procedures would not warrant its use. But in the closing paragraph, Dr. Joseph Bellina, a gynecologist, acknowledged expert in the use of lasers, and prime personal focal point of the article, is quoted: “When dealing with malignancies and reproduction, and your results are good, *cost really shouldn't be a question.*” (Italics, as you might have guessed, ours.)

First, the juxtaposition of these two medical entities is of some interest. Despite the progress and the promise in the struggle against cancer, there is still no medical word so fearful and devastating to patients and their families — and to which society will readily devote more funds. The general reaction has always been, “Spare no expense.” On the other hand, while the public watches advances in fertilization techniques (including the oldest one) with voyeuristic intensity, and however painful and poignant the problem is to the individuals involved, infertility can hardly be classified as a problem of great magnitude in the public scene. (That would seem to apply more to its counterpart, fertility.) The two concepts, cancer and infertility do, however, encompass a broad range of medical effort and philosophy and return us to the never-answered question: what is life worth? How does medical care compare with meat and potatoes or transportation systems or professional sports? How much is “right” to spend on relief of illness or pain, whether life is involved or not? How does one provide discount store service and materials in medical service? Is there a limit beyond which expense must be denied?

The thought expressed in the comment is, of course, easily extended to other areas where the

victims and their physicians can say, in effect, treat now and worry about the expense later. All branches of medicine have been included and nothing (apart from inflation) has contributed more in these years of increasing costs than the development of new instruments, devices and techniques, their dissemination, and the provision of personnel to utilize them — all in the name of patient benefit. The concept of catastrophic illness owes more to the anticipated economic impact than it does to the pathology or mortality rates involved. The place of any enticing new modality is ultimately determined by its value to the patient, and the physician's obligation will increasingly include the search for the most economically advantageous approach consistent with professional purpose and ethics.

But while the burgeoning technology (aimed at supporting our fundamental concepts of purpose) has been paying dividends in medical accomplishments, there has been a relentless move toward a confrontation between medical and economic values — another way of saying costs. Before we can address cost containment at this fundamental level, we must appraise the methodology closely. We must acknowledge, particularly as we are pressed into the commercial mold, that much of our effort would be indefensible in a commercial setting. Sophisticated and expensive techniques often return a relatively small number of lives or relieve a limited amount of suffering. An economic evaluation must accept that we succeed in prolonging lives in a state of marginal — or no — productivity other than giving employment to those who are charged with sustaining them in that state.

So, we find that as efforts toward cost containment come to bear on the situation, the pattern is repeated. Within the area of methodology and supply, there are various opportunities for economy. But ultimately, as these immediate and available measures are taken, we move closer to that difficult area of philosophy and principle that dictates the character rather than the substance of medical service.

Cost containment becomes no longer a matter of expedience, cutting corners, compromising, pursuing of formulas that will save money in various ways. It becomes a matter of reconciliation between the fundamental elements of medical purpose and the economic facts. It just may not be easy to find those elements we must eliminate and those we must retain. But families (read society) — and government (read society but louder) have always had that trouble. — D.E.G.

# A NEW ADMINISTRATION -- A NEW CHALLENGE

AT THE AMERICAN MEDICAL ASSOCIATION —  
WE'RE INVOLVED IN MEETING  
THE IMPORTANT CHALLENGES AND  
RESPONSIBILITIES OF THE 80's.  
This is the third in a series of reports on  
major issues facing the medical profession. The purpose is to  
inform physicians and medical students on what the AMA is  
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The conservative swing in the 1980 federal elections is bound to change the perspective on major health-care issues—in Congress as well as in the Administration. BUT . . . the issues will persist, and their disposition cannot be taken for granted.

So for you as a physician or medical student, what happens in the nation's capital will remain an urgent concern.

*Cost of care* will remain a key issue, and a pervasive one. Industry and business—which bulk large in the conservative constituency—are up in arms over the cost rise in employee health benefits.

While the conservative credo is anti-regulation, there's this to consider: If taxes are to be cut (as promised) and defense spending is to be increased (as promised), any balancing of the federal budget (as promised) could demand cost controls on health programs.

Here are some other matters to think about:

- *Funding for HHS*—the Department of Health and Human Services. In the prospective budget-tightening, how much money would be available for health programs other than “entitlement” programs (such as Medicare/Medicaid) that have to be paid for?
- *Health planning*. President Reagan called for an end to the federal involvement in health planning (a position also taken by the AMA House of Delegates). Will Congress go along?
- *National Health Insurance*. Any effectual move for NHI presumably would stress catastrophic coverage financed primarily through the private sector of the economy. To restrain costs, would there also be



features aimed at intensifying competition among health insurers and among health-care providers?

- *HMOs*—Health Maintenance Organizations. A call for intensified competition in the health-care industry could enhance the status of HMOs as a competitive vehicle. The government might assist them through tax benefits or pressure on employers to offer HMO coverage. (The AMA wants the government to be strictly neutral toward the various modes of health-care delivery—and leave any preference to the consumer.)
- *PSRO* (Professional Standards Review Organizations): The prevailing sentiment in top circles of the new Administration points to an anti-PSRO stance as part of their anti-regulation stance. What alternatives, if any, might Congress consider?
- *Medical education and manpower*. What would general budget-tightening leave for federal funding of medical schools, medical training, and the National Health Service Corps? Particularly in view of the physician-surplus forecasts that emanated from the Carter Administration.

To sum up, the basic directions in Washington, D.C., during the next four years do not necessarily add up to a clear and trouble-free future for the medical profession and patient care.

Only the AMA can give coherence and cohesion to your profession's ability to deal with the prospect. The Association has 43 personnel in Washington and Chicago whose activities include legislative research and analysis, preparation of testimony and other comment to Congress and the Administration, drafting of legislation, or lobbying. The fiscal-1981 budget for their activities totals almost \$3 million.

You need their expertise and effort. To sustain and advance their activities, the AMA needs additional membership, including yours. The current membership (230,000) carries us so far; yours would carry us further.

We need YOU . . . if we're to give you all the help that you need.

**For details on how to join, contact your state or county medical society or the Office of Membership Development, American Medical Association, 535 N. Dearborn, Chicago, IL 60610 (312) 751-6410.**

## AMA House of Delegates

(Continued from page 377)

affect the way medicine will be practiced in the future.

The competition proposals would result in a shift in the way medical services are delivered. Currently, medical care is delivered through a decentralized market. These proposals assume that given a cost incentive, patients will accept responsibility for first dollar health care costs and choose a health insurance plan with fewer benefits. Consequently, it is assumed that the patient will be motivated to use fewer health care services.

The House concurred with the Board's conclusion that the advocates of competition assume that patients are preoccupied with price and that assumption is yet to be fully demonstrated. Accessibility, reliability, and quality are just as important.

In other actions, the House voted to:

- Request a board reevaluation of association policies on health manpower and their relevance to current developments in physician supply, roles of allied health professions, medical education, and the health services market;

- Support the elimination of government funds for new start-ups of HMOs and for the termination of funds for other HMOs after completion of the current funding cycle;

- Recommend to hospital staffs that admission histories and physicals be performed only by physicians;

- Support a bill that would place a moratorium on the Federal Trade Commission's activities involving professionals;

- Oppose state laws making a physician's licensure contingent upon providing services to Medicaid beneficiaries or any other specified category of patients.

## PSRO and HSA

In view of the AMA's close decision last December to seek repeal of the PSRO law and the Reagan Administration's intention to let PSRO die a slow death, delegates worked long and hard on developing a policy advocating a comprehensive system of physician directed peer review. The final version calls on AMA to take the leadership, in collaboration with all levels of organized medicine, in maintaining or establishing a system of peer review mechanisms throughout the country. Delegates will hear a report of progress on this new effort next December.

Delegates also directed that AMA continue its efforts to repeal HSA laws. Most physicians agree that voluntary health planning that is physician

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\*Data on file Parke-Davis Marketing Research Dept.  
\*\*Based on total prescriptions filled for hemorrhoidal  
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The National Prescription Audit, IMS America Ltd.,  
September 1980.



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**Hemorrhoids and other anorectal uses**—TUCKS extra-soft cloth pads allow for the gentlest possible application to tender, inflamed, hemorrhoidal tissue. TUCKS are effective cleansing pads for everyday personal hygiene. Used on outer rectal areas, they remove residue that can bring on more irritation. Pads are premoistened with 50% witchhazel, 10% glycerin USP and de-ionized purified water USP which acts as a cooling, soothing lotion to help comfort sensitive anorectal tissue.

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Hemorrhoidal Suppositories with Hydrocortisone Acetate

**ANUSOL-HC® CREAM**

Rectal Cream with Hydrocortisone Acetate

**Caution:** Federal law prohibits dispensing without prescription.

**Description:** Each Anusol-HC Suppository contains hydrocortisone acetate, 10.0 mg; bismuth subgallate, 2.25%; bismuth resorcin compound, 1.75%; benzyl benzoate, 1.2%; Peruvian balsam, 1.8%; zinc oxide, 11.0%; also contains the following inactive ingredients: dibasic calcium phosphate, and certified coloring in a hydrogenated vegetable oil base.

Each gram of Anusol-HC Cream contains hydrocortisone acetate, 5.0 mg; bismuth subgallate, 22.5 mg; bismuth resorcin compound, 17.5 mg; benzyl benzoate, 12.0 mg; Peruvian balsam, 18.0 mg; zinc oxide, 110.0 mg; also contains the following inactive ingredients: propylene glycol, propylparaben, methylparaben, polysorbate 60 and sorbitan monostearate in a water-miscible base of mineral oil, glyceryl stearate and water.

Anusol-HC Suppositories and Anusol-HC Cream help to relieve pain, itching and discomfort arising from irritated anorectal tissues. These preparations have a soothing, lubricant action on mucous membranes, and the antiinflammatory action of hydrocortisone acetate in Anusol-HC helps to reduce hyperemia and swelling.

The hydrocortisone acetate in Anusol-HC is primarily effective because of its antiinflammatory, antipruritic and vasoconstrictive actions.

**Indications and Usage:** Anusol-HC Suppositories and Anusol-HC Cream are adjunctive therapy for the symptomatic relief of pain, itching and discomfort in: external and internal hemorrhoids, proctitis, papillitis, cryptitis, anal fissures, incomplete fistulas, pruritus ani and relief of local pain and discomfort following anorectal surgery.

Anusol-HC is especially indicated when inflammation is present. After acute symptoms subside, most patients can be maintained on regular Anusol® Suppositories or Ointment.

**Contraindications:** Anusol-HC Suppositories and Anusol-HC Cream are contraindicated in those patients with a history of hypersensitivity to any of the components of the preparations.

**Warnings:** The safe use of topical steroids during pregnancy has not been fully established. Therefore, during pregnancy, they should not be used unnecessarily on extensive areas, in large amounts or for prolonged periods of time.

**Precautions: General:** Symptomatic relief should not delay definitive diagnoses or treatment.

Prolonged or excessive use of corticosteroids might produce systemic effects.

If irritation develops, Anusol-HC Suppositories and Anusol-HC Cream should be discontinued and appropriate therapy instituted.

In the presence of an infection the use of an appropriate antifungal or antibacterial agent should be instituted. If a favorable response does not occur promptly, the corticosteroid should be discontinued until the infection has been adequately controlled.

Anusol-HC is not for ophthalmic use.

**Pregnancy**

See "WARNINGS"

**Pediatric Use**

Care should be taken when using the corticosteroid hydrocortisone acetate in children and infants.

**Dosage and Administration:** Anusol-HC Suppositories—

Adults: Remove foil wrapper and insert suppository into the anus. Insert one suppository in the morning and one at bedtime for 3 to 6 days or until inflammation subsides. Then maintain comfort with regular Anusol Suppositories.

Anusol-HC Cream—Adults: After gentle bathing and drying of the anal area, remove tube cap and apply to the exterior surface and gently rub in. For internal use, attach the plastic applicator and insert into the anus by applying gentle continuous pressure. Then squeeze the tube to deliver medication. Cream should be applied 3 or 4 times a day for 3 to 6 days until inflammation subsides. Then maintain comfort with regular Anusol Ointment.

**NOTE:** If staining from either of the above products occurs, the stain may be removed from fabric by hand or machine washing with household detergent.

**How Supplied:** Anusol-HC Suppositories—boxes of 12

(N 0071-1089-07) and boxes of 24 (N 0071-1089-13) in silver foil strips with Anusol-HC printed in black.

Anusol-HC Cream—one-ounce tube (N 0071-3090-13) with plastic applicator.

Store between 59°-86°F (15°-30°C).

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directed can be effective in meeting the needs.

In other actions, the House voted to:

- Endorse the concept of equal rights for men and women, but not the Constitutional Equal Rights Amendment;

- Urge the Food and Drug Administration to accelerate review of drugs on its "lacking evidence of effectiveness list";

- Urge the Federal Aviation Agency to study medical emergencies on commercial planes and how they were treated with currently required medical kits;

- Have the AMA develop an educational program dealing with child molestation, incest, and exploitation of children.

In perhaps the most publicly noted issued at the meeting, delegates voted to have AMA oppose continued federal tobacco price supports. Opposition came from many, who held it was not a medical issue and would weaken Congressional support for other more relevant AMA legislative positions. The House affirmed its position that smoking is a health hazard.

The Kansas Hospitality Suite enjoyed popularity with the AMA delegates, many of whom visited us there to discuss the issues, exchange ideas, or just to pick up a wheat weaving or a sunflower. While candidates from Kansas came very close to winning the seats on AMA councils, we will need to make another attempt in this direction. Bob Loomis, Eugene, Oregon, and J. William Cox, Bethesda, Maryland, were winners of Kansas beef in the drawing.

AMA House meetings provide a unique educational opportunity and we would encourage you to attend and participate. It was most gratifying to have new faces from Kansas present at the national gathering. Their moral support and companionship were much appreciated.

If you cannot come to the meeting, you can still be represented through your delegate. Please let us know your opinions. You can also prepare a resolution and request that it be submitted to the House. The next AMA House of Delegates meeting will be in Las Vegas, December 6-9, 1981.

Also, today, call your colleague who is not a member of AMA and convince him/her of the necessity to support the AMA through membership. The Association is already working for them. Kansas is only a few AMA memberships short of increasing our delegate strength to three delegates and three alternates.

CLAIR C. CONARD, M.D., *Delegate*  
ALEX C. SCOTT, M.D., *Delegate*  
KERMIT G. WEDEL, M.D., *Alternate*  
LEW W. PURINTON, M.D., *Alternate*



# Information for Authors

## Manuscript Preparation

Manuscripts must be typewritten, double spaced leaving wide margins. Submit the original, plus one copy if possible.

*Titles* should be short, specific, and amenable to indexing. A subtitle if frequently used to keep the main title short.

*Summary:* all manuscripts should include a short abstract which is a factual (not descriptive) summary of the work.

*Author Responsibility:* the author is responsible for all statements made in his work, including changes made by the copy editor. Manuscripts are received with the explicit understanding that they are not simultaneously under consideration by any other publication. Publication elsewhere will be subsequently authorized at the discretion of the Editor.

*Galley Proof:* To make extensive changes in the article after the text has been set in type may require an additional cost which exceeds the original. The galley proof is for correction of ERRORS, and a rewriting of the article should be done on the original copy BEFORE it is submitted for publication.

*Drugs* should be called by their generic names; the trade names can be added in parentheses if they are considered important. All *units of measure* must be given in the metric system.

## References

Bibliographic references should not exceed 20 in number, documenting key publications. Personal communications and unpublished data should not be included. References should be arranged according to the order of citation, and not alphabetically. All references must be numbered consecutively and all must be cited in the text. Use the style of the AMA publications, giving: name of author, title of article, name of periodical, volume, pages, year.

## Illustrations

All material which cannot be set in type, such as photographs, line drawings, graphs, charts, tracings (for preparation of tables, see below) must be mounted on white cardboard. All must be identified on the back as to figure number, author's name, and an arrow indicating top. Legends should be typed double spaced on a separate sheet of paper, limited to a maximum of 30 words.

*Drawings and Graphs* should be done professionally in India ink on illustration board or high grade white drawing paper.

*Photographic* material should be submitted in duplicate as high contrast, glossy prints. Color illustrations will be accepted for publication only if the author assumes the cost.

THE JOURNAL will assume the cost of B/W engravings and cuts up to \$35 (or 5 cuts). Engraving cost for illustrations in excess of \$35 will be billed to the author.

## Tables

Because tables are set by hand, their cost is comparable to illustrations. A reasonable number of tables are allowed without cost to the author.

Tables should be self-explanatory and should supplement, not duplicate, the text. Since the purpose of a table is to compare or classify related items, the data must be logically and clearly organized. The relationship and comparison are established by the correct choice of column heads (captions of vertical columns) and stubs (left entries in horizontal listings).

Each table should be typed double spaced, including all headings, on separate sheets of lettersize paper. Oversize paper should not be used. Instead, repeat heads and stubs on a second sheet for tables requiring extra width. Number tables consecutively. Each table must have a title.

## Reprints

A reprint order form with a table covering cost will be sent with the galley proof to each contributor. Since the JOURNAL has no way to provide for reprints, they must be ordered by the author and purchased directly from the printer.

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Nocturnal recumbency leg muscle cramping is frequently an unwelcome bedfellow for many patients—especially those with arthritis, diabetes, or peripheral vascular disease... consider Quinamm... simple, convenient dosage—usually just one tablet at bedtime... can provide restful, welcome sleep without night leg cramps.

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(quinine sulfate tablets)

CAUTION Federal law prohibits dispensing without prescription.

#### BRIEF SUMMARY

#### INDICATIONS AND USAGE

For the prevention and treatment of nocturnal recumbency leg muscle cramps.

#### CONTRAINDICATIONS

Quinamm may cause fetal harm when administered to a pregnant woman. Congenital malformations in the human have been reported with the use of quinine, primarily with large doses (up to 30 g) for attempted abortion. In about half of these reports the malformation was deafness related to auditory nerve hypoplasia. Among the other abnormalities reported were limb anomalies, visceral defects, and visual changes. In animal tests, teratogenic effects were found in rabbits and guinea pigs and were absent in mice, rats, dogs, and monkeys. Quinamm is contraindicated in women who are or may become pregnant. If this drug is used during pregnancy, or if the patient becomes pregnant while taking this drug, the patient should be apprised of the potential hazard to the fetus. Because of the quinine content, Quinamm is contraindicated in patients with known quinine hypersensitivity and in patients with glucose-6-phosphate dehydrogenase (G-6-PD) deficiency.

Since thrombocytopenic purpura may follow the administration of quinine in highly sensitive patients, a history of this occurrence associated with previous quinine ingestion contraindicates its further use. Recovery usually occurs following withdrawal of the medication and appropriate therapy.

This drug should not be used in patients with tinnitus or optic neuritis or in patients with a history of blackwater fever.

#### WARNINGS

Repeated doses or overdosage of quinine in some individuals may precipitate a cluster of symptoms referred to as cinchonism. Such symptoms, in the mildest form, include ringing in the ears, headache, nausea, and slightly disturbed vision, however, when medication is continued or after large single doses, symptoms also involve the gastrointestinal tract, the nervous and cardiovascular systems, and the skin.

Hemolysis (with the potential for hemolytic anemia) has been associated with a G-6-PD deficiency in patients taking quinine. Quinamm should be stopped immediately if evidence of hemolysis appears.

If symptoms occur, drug should be discontinued and supportive measures instituted. In case of overdosage, see OVERDOSAGE section of prescribing information.

#### PRECAUTIONS

##### General

Quinamm should be discontinued if there is any evidence of hypersensitivity (See CONTRAINDICATIONS.) Cutaneous flushing, pruritus, skin rashes, fever, gastric distress, dyspnea, ringing in the ears, and visual impairment are the usual expressions of hypersensitivity, particularly if only small doses of quinine

have been taken. Extreme flushing of the skin accompanied by intense, generalized pruritus is the most common form. Hemoglobinuria and asthma from quinine are rare types of idiosyncrasy.

In patients with atrial fibrillation, the administration of quinine requires the same precautions as those for quinidine. (See Drug Interactions.)

##### Drug Interactions

Increased plasma levels of digoxin and digitoxin have been demonstrated in individuals after concomitant quinidine administration. Because of possible similar effects from use of quinine, it is recommended that plasma levels for digoxin and digitoxin be determined for those individuals taking these drugs and Quinamm concomitantly.

Concurrent use of aluminum-containing antacids may delay or decrease absorption of quinine.

Cinchona alkaloids, including quinine, have the potential to depress the hepatic enzyme system that synthesizes the vitamin K-dependent factors. The resulting hypoprothrombinemic effect may enhance the action of warfarin and other oral anticoagulants.

The effects of neuromuscular blocking agents (particularly pancuronium, succinylcholine, and tubocurarine) may be potentiated with quinine, and result in respiratory difficulties.

Urinary alkalinizers (such as acetazolamide and sodium bicarbonate) may increase quinine blood levels with potential for toxicity.

##### Drug Laboratory Interactions

Quinine may produce an elevated value for urinary 17-ketogenic steroids when the Zimmerman method is used.

##### Carcinogenesis, Mutagenesis, Impairment of Fertility

A study of quinine sulfate administered in drinking water (0.1%) to rats for periods up to 20 months showed no evidence of neoplastic changes.

Mutation studies of quinine (dihydrochloride) in male and female mice gave negative results by the micronucleus test. Intraperitoneal injections (0.5 mM/kg) were given twice, 24 hours apart. Direct *Salmonella typhimurium* tests were negative; when mammalian liver homogenate was added, positive results were found.

No information relating to the effect of quinine upon fertility in animal or in man has been found.

Pregnancy Category X. See CONTRAINDICATIONS.

##### Nonteratogenic Effects

Because quinine crosses the placenta in humans, the potential for fetal effects is present. Stillbirths in mothers taking quinine have been reported in which no obvious cause for the fetal deaths was shown. Quinine in toxic amounts has been associated with abortion. Whether this action is always due to direct effect on the uterus is questionable.

##### Nursing Mothers

Caution should be exercised when Quinamm is given to nursing women because quinine is excreted in breast milk (in small amounts).

#### ADVERSE REACTIONS

The following adverse reactions have been reported with Quinamm in therapeutic or excessive dosage. (Individual or multiple symptoms may represent cinchonism or hypersensitivity.)

**Hematologic:** acute hemolysis, thrombocytopenic purpura, agranulocytosis, hypoprothrombinemia.

**CNS:** visual disturbances, including blurred vision with scotomata, photophobia, diplopia, diminished visual fields, and disturbed color vision, tinnitus, deafness, and vertigo, headache, nausea, vomiting, fever, apprehension, restlessness, confusion, and syncope.

**Dermatologic/allergic:** cutaneous rashes (urticarial, the most frequent type of allergic reaction, papular or scarlatiniform), pruritus, flushing of the skin, sweating, occasional edema of the face.

**Respiratory:** asthmatic symptoms.

**Cardiovascular:** anginal symptoms.

**Gastrointestinal:** nausea and vomiting (may be CNS-related), epigastric pain.

**Tolerance, abuse, or dependence** with Quinamm has not been reported.

#### OVERDOSAGE

See prescribing information for a discussion on symptoms and treatment of overdose.

#### DOSE AND ADMINISTRATION

1 tablet upon retiring. If needed, 2 tablets may be taken nightly—1 following the evening meal and 1 upon retiring.

After several consecutive nights in which recumbency leg cramps do not occur, Quinamm may be discontinued in order to determine whether continued therapy is needed.

Product Information as of October, 1980

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Cayey, Puerto Rico 00633

Direct Medical Inquiries to

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**WARNING:** Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as a failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

**PRECAUTIONS:** As with other antibacterial preparations, prolonged use may result in overgrowth of non-susceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

**ADVERSE REACTIONS:** Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section). Complete literature available on request from Professional Services Dept. PML.



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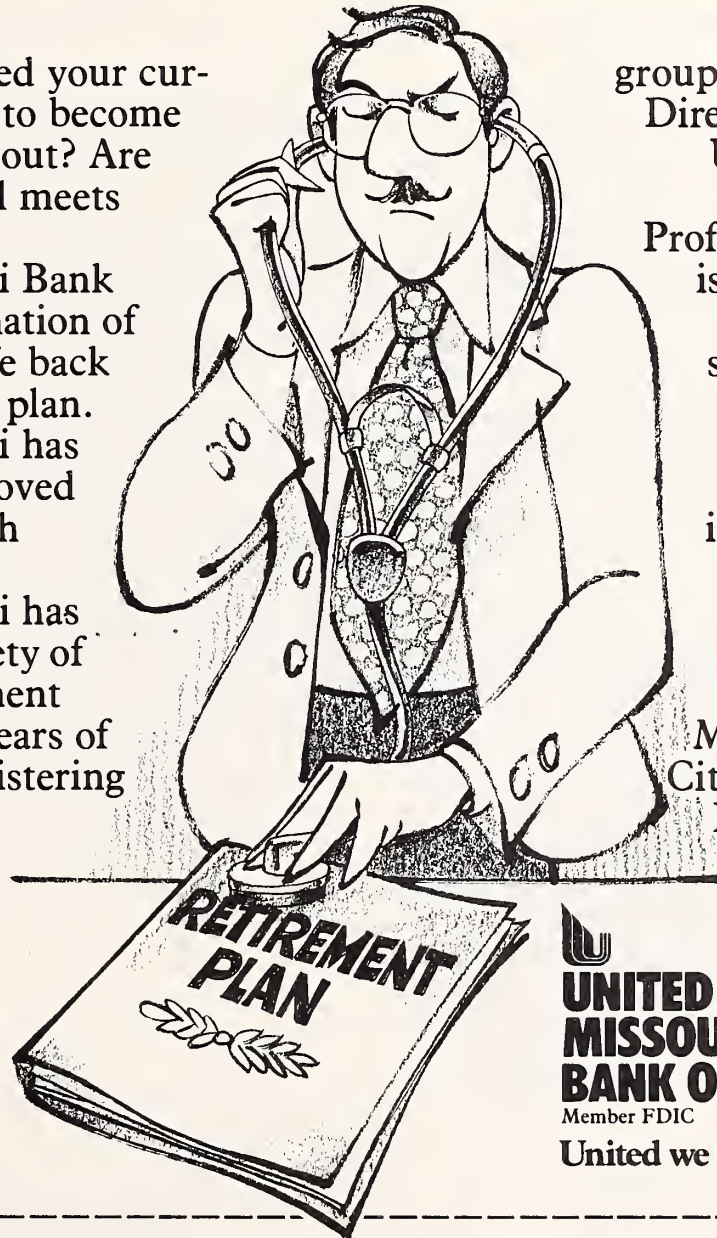
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### Acute Renal Failure

(Continued from page 412)

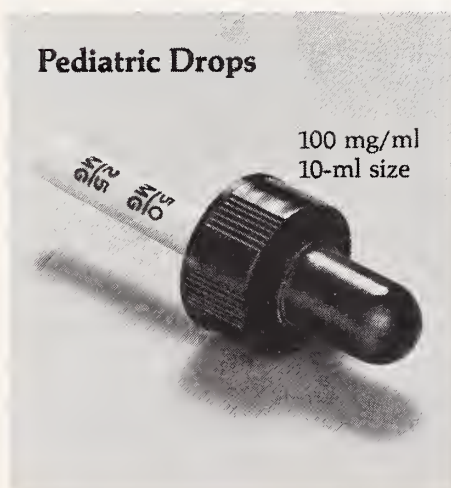
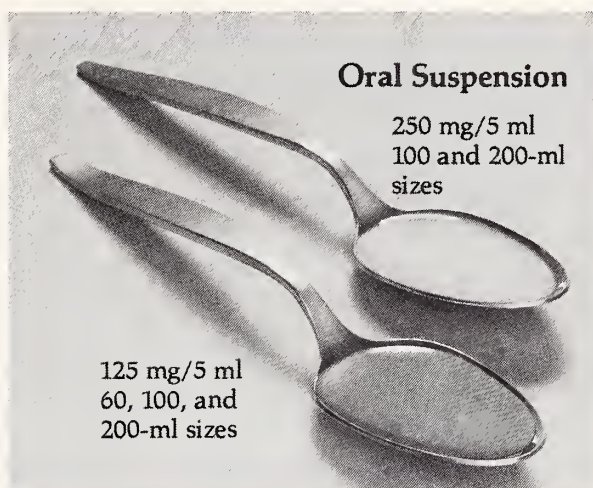
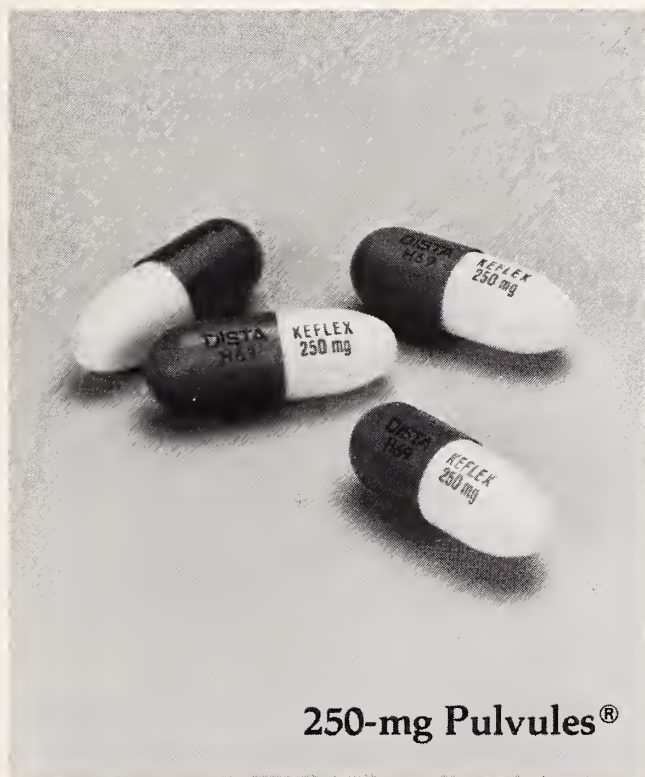
#### Answers

1. Less than 1 per cent.
2. Tubular function.
3. Medium to small size arterioles.
4. Probably yes.
5. Casts containing desquamated necrotic debris of tubular cells.

#### Suggested Readings

1. Stein, J. H.; Liftschitz, M.D. and Barnes, L. D.: Current concepts on the pathogenesis of acute renal failure. *Am. J. Physiol.* 234:F171-F181, 1978.
2. Patak, R. V.; Liftschitz, M.D. and Stein, J. H.: Acute renal failure: Clinical aspects and pathophysiology. *Cardiovasc. Med.* 4:19-38, 1979.
3. Levinsky, N. G.; Alexander, F. A. and Venkatachalam, V. H.: Acute renal failure. *The Kidney* (Brenner, B. H. and Rector, R. C., eds.). Philadelphia, W. B. Saunders, pp. 1181-1236, 1981.

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**SCIENTIFIC/SKI MEETING: —**  
**The Northwestern Medical Association convenes for its 35th Annual Meeting at Sun Valley, Idaho, from February 8 to 12, 1982. Diabetes and related vascular, neurologic, eye, and ENT problems, ski-injury prevention, and high-altitude physiology will be discussed by experts. Approved for 10 CME Category I credits. Registration 3 to 5 p.m., February 8, Challenger Inn, Sun Valley. Non-members registration \$100. For information, write to Norman Christensen, M.D., Secretary, 2456 Buhne Street, Eureka, California 95501.**

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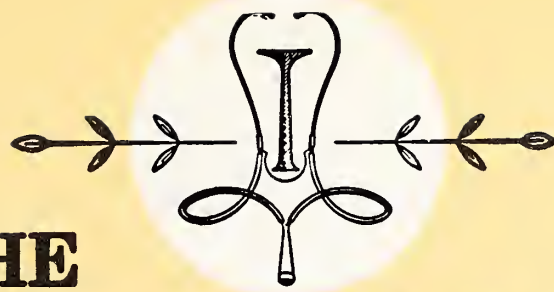
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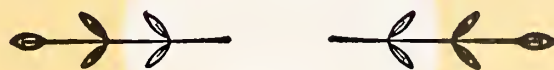
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1981



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# The JOURNAL of the KANSAS MEDICAL SOCIETY

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Address all correspondence to the JOURNAL OF THE KANSAS MEDICAL SOCIETY, 1300 Topeka Avenue, Topeka, Kansas 66612; 913-235-2383. Manuscripts should be submitted to the Managing Editor. Refer to "Information for Authors" for details.

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# Council Meeting

## *Report of Meeting Held September 26, 1981*

A meeting of the Council was held on Saturday, September 26, 1981, at the Downtown Topeka Ramada Inn, beginning at 9:30 AM. Herman W. Hiesterman, M.D., President, presided. Present were: Drs. F. Calvin Bigler, Garden City; John P. Brockhouse, Emporia; Richard L. Brownrigg, Dodge City; Dean T. Collins, Topeka; Jack R. Cooper, Shawnee Mission; Louis M. Culp, Kansas City; Robert D. Durst, Jr., Topeka; Herbert Fransen, Newton; Robert W. Hughes, Lawrence; Robert F. Moore, Caney; James H. Ransom, Topeka; Alex Scott, Junction City; Newton C. Smith, Arkansas City; William K. Walker, Sedan; W. H. Walker, Eskridge; Wayne O. Wallace, Jr., Atchison; Wallace N. Weber, Hays; and Kermit G. Wedel, Minneapolis. Also present was Mr. L. Lewis Wall, Medical Student. Also present was Mrs. Robert F. Moore, Auxiliary President. Also present were Dwight Allen, Jerry Slaughter, and Gary Caruthers, staff.

The Council reviewed and approved the following Executive Committee actions:

- Recommended that the 1985 Annual Meeting be scheduled for May 2-5, at the Broadmoor Hotel, Colorado Springs;
- Encouraged the component medical societies to investigate and participate where appropriate in the Civilian Military Contingency Hospital System;
- Appointed Daniel Pauls, M.D., Parsons, to the KaMPAC Board to represent Congressional District #5;
- Directed staff to study the implications of requiring CME and professional liability insurance of KMS-KAFP retired physicians;
- Excused three members from paying delinquent dues;
- Reaffirmed present CME policy and denied a request to establish a mechanism for processing of individual physician credits;
- Approved a \$10,000 loan at 10 per cent interest for Mediserve, Inc.;
- Endorsed Auxiliary participation in the Media Communications Project, and approved associate membership in the Kansas Association of Broadcasters;
- Recommended that the \$20 assessment not be

enacted and that an in-depth study be conducted to determine needs;

- Authorized up to \$5,000 to conduct a membership survey;
- Authorized partial replacement of windows in the Executive Office building as an energy savings proposal;
- Authorized replacement of the building sign.

The Council heard the following reports for informational purposes:

*Status of Litigation Over ARNP Regulations* — KMS has asked for a clear interpretation of the regulations, contending that the regulations are overbroad and overstep legislative intent. There are three possible outcomes: (1) a ruling that the regulations are invalid accompanied by an injunction; (2) a clarification of the definition of the role between physicians and nurses; and (3) a ruling that KMS has no standing in the case. The determination may be known by May 1982.

*Naturopaths* — The technical committee appointed under the Credentialing Program heard the application by naturopaths for licensure. The committee consists of: member of the State Health Coordinating Council (chairman); physician (Lew W. Purinton, M.D., Wichita); dietitian, attorney, chiropractor, retired engineer, educator. This committee will make its recommendations to the Statewide Health Coordinating Council, which will submit its opinions to the Secretary of Health and Environment, who in turn will recommend his decision to the Legislature.

*Non-Member Status* — 675 letters had been mailed to non-members on July 1. Of the 132 responses received, 80 indicated an interest in joining the Society. A follow-up letter to non-responses was mailed September 22. An update report to the Council will be presented at the January meeting.

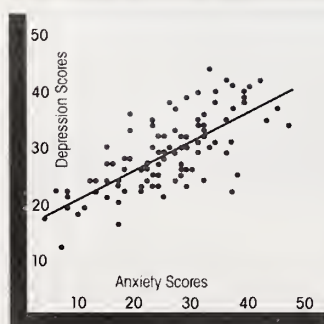
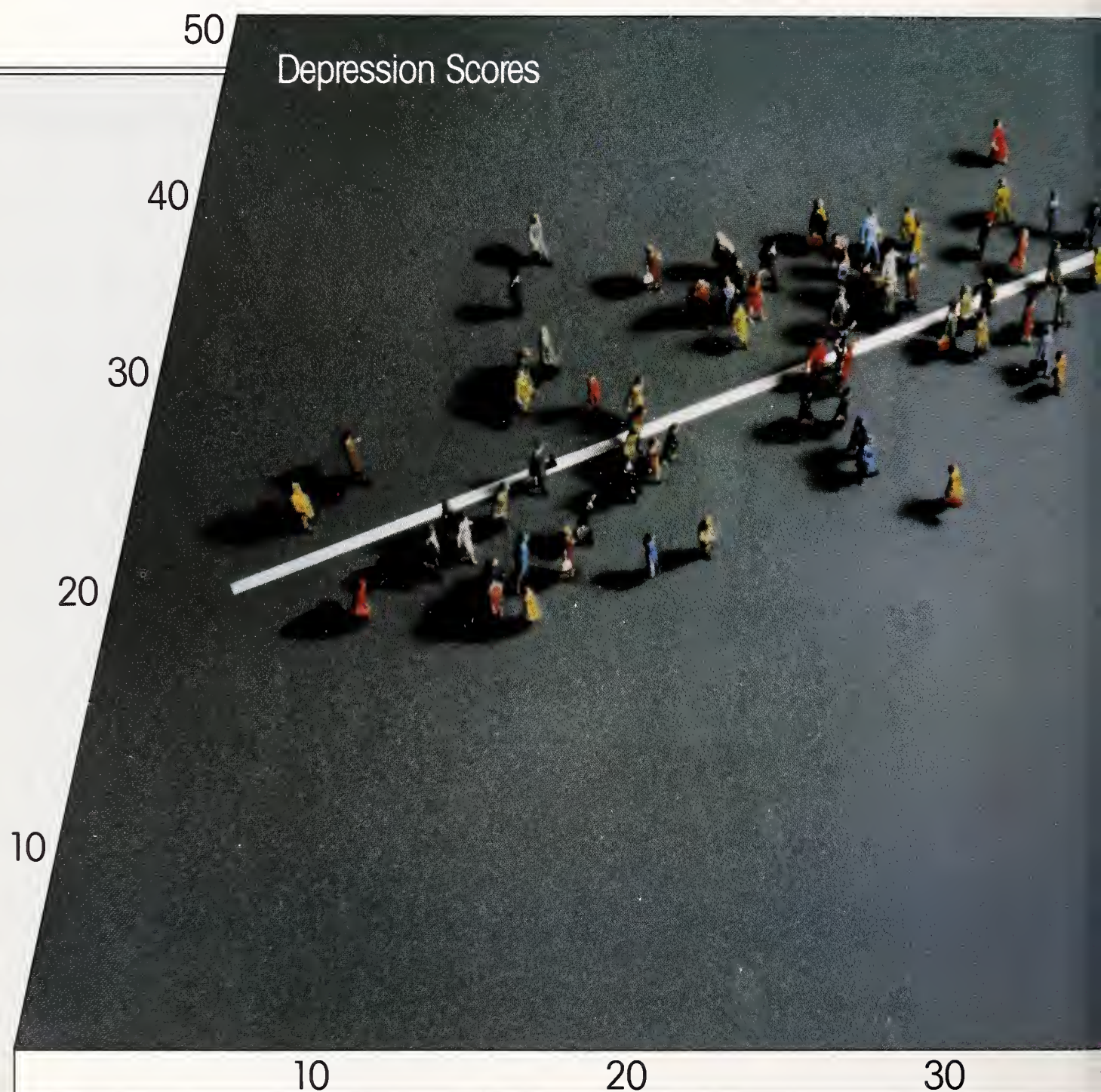
*Dispensing Physicians* — According to the Attorney General's opinion, physicians may delegate *administration, not the dispensing*, of drugs to nurses. This matter will be studied by the Legislative Committee.

*Professional Liability* — The Commission is interviewing insurance companies about a risk management program in conjunction with the profes-

*Continued on page 476*



# FOR THE 7 OF 10 NONPSYCHOTIC



## Clear correlation between anxiety and depression<sup>3</sup>

The above graph illustrates a relationship between anxiety and depression, indicating that patients seldom present with anxiety or depression alone; more often they have both in varying degrees. Data based on a sampling of 100 outpatients (64 male; 36 female) seen at a general psychiatric clinic.

<sup>3</sup>Adapted from Claghorn, J. The anxiety-depression syndrome. *Psychosomatics* 11:438-441, Sept-Oct 1970.



# DEPRESSED PATIENTS WHO ARE ALSO ANXIOUS<sup>1,2</sup>

## Most depressed patients are also anxious...

Some authors estimate that 70% of all nonpsychotic patients with symptoms of depression have concomitant symptoms of anxiety.<sup>1,2</sup> One author found a distinct correlation between anxiety and depression scores in 100 nonpsychotic outpatients administered the Minnesota Multiphasic Personality Inventory in a general psychiatric clinic.<sup>3</sup> As depression scores increased, so did anxiety scores. No attempt was made to select patients other than to exclude psychotics.

## but not psychotic

The logic of treating both components of anxious depression is clear. Antipsychotics, like the phenothiazines, however, carry a well-documented risk of tardive dyskinesia.<sup>4</sup> Because of this, an APA Task Force recently recommended the judicious use of phenothiazines in cases other than chronic psychosis or the use of alternative treatments.

## A better way to give relief

Limbitrol combines the specific anxiolytic action of Librium® (chlordiazepoxide HCl/Roche)—a benzodiazepine with a long history of safe use—with the antidepressant action of amitriptyline, a tricyclic of established clinical efficacy. In comparison to phenothiazines, Limbitrol and its components have rarely been associated with tardive dyskinesia or other extrapyramidal side effects. And in terms of rapid response and patient compliance, Limbitrol appears to be superior to amitriptyline alone. Controlled multiclinic studies showed Limbitrol relieved more symptoms more rapidly than did amitriptyline.<sup>5</sup> Despite a higher incidence of drowsiness, the dropout rate due to side effects was lower with Limbitrol. (See adverse reactions section in summary of product information on next page. As with any CNS-acting agent, patients should be cautioned about driving or using dangerous machines while on therapy with Limbitrol.)

**References:** 1. Rickels K. Drug treatment of anxiety, in *Psychopharmacology in the Practice of Medicine*, ed. Jorvik ME. New York, Appleton-Century-Crofts, 1977, p. 316. 2. Schatzberg AF, Cole JO: Benzodiazepines in depressive disorders. *Arch Gen Psychiatry* 35:1359-1365, 1978. 3. Clogharn J: The anxiety-depression syndrome. *Psychosomatics* 11:438-441, 1970. 4. The Task Force on Late Neurological Effects of Antipsychotic Drugs: Tardive dyskinesia, summary of a task force report of the American Psychiatric Association. *Am J Psychiatry* 137:1163-1172, 1980. 5. Feighner JP *et al*: A placebo-controlled multicenter trial of Limbitrol versus its components (amitriptyline and chlordiazepoxide) in the symptomatic treatment of depressive illness. *Psychopharmacology* 61:217-225, 1979.

In moderate depression and anxiety

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**Tablets 10-25** each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt)

## Relief without a phenothiazine

Please see summary of product information on next page.

Anxiety Scores

50



# **LIMBITROL® TABLETS Tranquilizer—Antidepressant**

Before prescribing, please consult complete product information, a summary of which follows:

**Indications:** Relief of moderate to severe depression associated with moderate to severe anxiety

**Contraindications:** Known hypersensitivity to benzodiazepines or tricyclic antidepressants. Do not use with monoamine oxidase (MAO) inhibitors or within 14 days following discontinuation of MAO inhibitors since hyperpyretic crises, severe convulsions and deaths have occurred with concomitant use, then initiate cautiously, gradually increasing dosage until optimal response is achieved. Contraindicated during acute recovery phase following myocardial infarction.

**Warnings:** Use with great care in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur in patients taking tricyclic antidepressants and anticholinergic-type drugs. Closely supervise cardiovascular patients. (Arrhythmias, sinus tachycardia and prolongation of conduction time reported with use of tricyclic antidepressants, especially high doses. Myocardial infarction and stroke reported with use of this class of drugs.) Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving).

**Usage in Pregnancy:** Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Since physical and psychological dependence to chlordiazepoxide have been reported rarely, use caution in administering Limbitrol to addiction-prone individuals or those who might increase dosage, withdrawal symptoms following discontinuation of either component alone have been reported (nausea, headache and malaise for amitriptyline; symptoms [including convulsions] similar to those of barbiturate withdrawal for chlordiazepoxide).

**Precautions:** Use with caution in patients with a history of seizures, in hyperthyroid patients or those on thyroid medication, and in patients with impaired renal or hepatic function. Because of the possibility of suicide in depressed patients, do not permit easy access to large quantities in these patients. Periodic liver function tests and blood counts are recommended during prolonged treatment. Amitriptyline component may block action of guanethidine or similar antihypertensives. Concomitant use with other psychotropic drugs has not been evaluated: sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Limbitrol should not be taken during the nursing period. Not recommended in children under 12.

In the elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects.

**Adverse Reactions:** Most frequently reported are those associated with either component alone: drowsiness, dry mouth, constipation, blurred vision, dizziness and bloating. Less frequently occurring reactions include vivid dreams, impotence, tremor, confusion and nasal congestion. Many depressive symptoms including anorexia, fatigue, weakness, restlessness and lethargy have been reported as side effects of both Limbitrol and amitriptyline. Granulocytopenia, jaundice and hepatic dysfunction have been observed rarely.

The following list includes adverse reactions not reported with Limbitrol but requiring consideration because they have been reported with one or both components or closely related drugs:

**Cardiovascular:** Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke.

**Psychiatric:** Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania and increased or decreased libido.

**Neurologic:** Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns.

**Anticholinergic:** Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract.

**Allergic:** Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus.

**Hematologic:** Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia.

**Gastrointestinal:** Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue.

**Endocrine:** Testicular swelling and gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female and elevation and lowering of blood sugar levels.

**Other:** Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling.

**Overdosage:** Immediately hospitalize patient suspected of having taken an overdose. Treatment is symptomatic and supportive. I.V. administration of 1 to 3 mg physostigmine salicylate has been reported to reverse the symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.

**Dosage:** Individualize according to symptom severity and patient response. Reduce to smallest effective dosage when satisfactory response is obtained. Larger portion of daily dose may be taken at bedtime. Single *h.s.* dose may suffice for some patients. Lower dosages are recommended for the elderly. Limbitrol 10-25, initial dosage of three to four tablets daily in divided doses, increased to six tablets or decreased to two tablets daily as required. Limbitrol 5-12.5, initial dosage of three to four tablets daily in divided doses, for patients who do not tolerate higher doses.

**How Supplied:** White, film-coated tablets, each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt) and blue, film-coated tablets, each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)—bottles of 100 and 500, Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25, and in boxes containing 10 strips of 10; Prescription Paks of 50.

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## **Practice in Living**

At the request of the Impaired Physicians Committee of the Kansas Medical Society, space has been made available in the *Journal* for a section featuring articles relating to concerns and problems unique to the lifestyle of the physician. Articles may focus on communication, stress and distress, responsibilities to self, medical marriage, recreation and leisure, and related topics. Manuscripts or suggested topics and questions are solicited and should be submitted to:

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Twofold analgesic action teamed with time-proven efficacy against concurrent anxiety and tension in patients with musculoskeletal disease.\*

#### EQUAGESIC—Abbreviated Summary

**INDICATIONS:** Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows:

"Possibly" effective for the treatment of pain accompanied by tension and/or anxiety in patients with musculoskeletal disease or tension headache.

Final classification of the less-than-effective indications requires further investigation.

The effectiveness of Equagesic in long-term use, i.e. more than four months, has not been assessed by systematic clinical studies. The physician should periodically reassess usefulness of the drug for the individual patient.

**CONTRAINDICATIONS:** Equagesic should not be given to individuals with a history of sensitivity or severe intolerance to aspirin, meprobamate, or ethoheptazine citrate.

**WARNINGS:** Careful supervision of dose and amounts prescribed for patients is advised, especially with those patients with known propensity for taking excessive quantities of drugs.

Excessive and prolonged use in susceptible persons, e.g., alcoholics, former addicts, and other severe psychoneurotics, has been reported to result in dependence on or habituation to the drug. Where excessive dosage has continued for weeks or months, dosage should be reduced gradually rather than abruptly stopped, since withdrawal of a "crutch" may precipitate withdrawal reaction of greater proportions than that for which the drug was originally prescribed. Abrupt discontinuance of doses in excess of the recommended dose has resulted in some cases in the occurrence of epileptiform seizures.

Special care should be taken to warn patients taking meprobamate that tolerance to alcohol may be lowered with resultant slowing of reaction time and impairment of judgment and coordination.

**USAGE IN PREGNANCY AND LACTATION:** An increased risk of congenital malformations associated with the use

of minor tranquilizers (meprobamate, chloridiazepoxide, and diazepam) during the first trimester of pregnancy has been suggested in several studies. Because use of these drugs is rarely a matter of urgency, their use during this period should almost always be avoided. The possibility that a woman of child-bearing potential may be pregnant at the time of institution of therapy should be considered. Patients should be advised that if they become pregnant during therapy or intend to become pregnant they should communicate with their physicians about the desirability of discontinuing the drug. Meprobamate passes the placental barrier. It is present both in umbilical-cord blood and in near maternal plasma levels and in breast milk of lactating mothers at concentrations two to four times that of maternal plasma. When use of meprobamate is contemplated in breast-feeding patients, the drug's higher concentration in breast milk as compared to maternal plasma levels should be considered.

Preparations containing aspirin should be kept out of the reach of children. Equagesic is not recommended for patients 12 years of age and under.

**PRECAUTIONS:** Should drowsiness, ataxia, or visual disturbance occur, the dose should be reduced. If symptoms continue, patients should not operate a motor vehicle or any dangerous machinery.

Suicidal attempts with meprobamate have resulted in coma, shock, vasomotor and respiratory collapse, and anuria. Very few suicidal attempts were fatal, although some patients ingested very large amounts of the drug (20 to 40 gm). These doses are much greater than recommended. The drug should be given cautiously, and in small amounts, to patients who have suicidal tendencies. In cases where excessive doses have been taken, sleep ensues rapidly and blood pressure, pulse, and respiratory rates are reduced to basal levels. Hyperventilation has been reported occasionally. Any drug remaining in the stomach should be removed and symptomatic treatment given. Should respiration become very shallow and slow, CNS stimulants, e.g., caffeine, Metrazol, or amphet-

mine, may be cautiously administered. If severe hypotension develops, pressor amines should be used parenterally to restore blood pressure to normal levels.

**ADVERSE REACTIONS:** A small percentage of patients may experience nausea with or without vomiting and epigastric distress. Dizziness occurs rarely when meprobamate and ethoheptazine citrate with aspirin is administered in recommended dosage. The meprobamate may cause drowsiness but, as a rule, this disappears as therapy is continued. Should drowsiness persist and be associated with ataxia, this symptom can usually be controlled by decreasing the dose, but occasionally it may be desirable to administer central stimulants such as amphetamine or mephentermine sulfate concomitantly to control drowsiness.

A clearly related side effect to the administration of meprobamate is the rare occurrence of allergic or idiosyncratic reactions. This response develops, as a rule, in patients who have had only 1-4 doses of meprobamate and have not had a previous contact with the drug. Previous history of allergy may or may not be related to the incidence of reactions.

Mild reactions are characterized by an itchy urticarial or erythematous, maculopapular rash which may be generalized or confined to the groin. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema, and fever have also been reported.

More severe cases, observed only very rarely, may also have other allergic responses, including fever, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case), and hyperthermia. Treatment should be symptomatic such as administration of epinephrine, antihistamine, and possibly hydrocortisone. Meprobamate should be stopped, and resumption of therapy should not be attempted.

Rare cases have been reported where patients receiving meprobamate suffered from aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis, and hemolytic anemia. In nearly every instance reported, other toxic agents known to have caused these conditions have been associated with meprobamate. A few cases of leukopenia during

continuous administration of meprobamate are reported, most of these returned to normal without discontinuation of the drug. Impairment of accommodation and visual acuity has been reported rarely.

**OVERDOSE:** Two instances of accidental or intentional significant overdosage with ethoheptazine citrate combined with aspirin have been reported. These were accompanied by symptoms of CNS depression, including drowsiness and light-headedness, with uneventful recovery. However, on the basis of pharmacological data, it may be anticipated that CNS stimulation could occur. Other anticipated symptoms would include nausea and vomiting. Appropriate therapy of signs and symptoms as they appear is the only recommendation possible at this time. Overdosage with ethoheptazine combined with aspirin would probably produce the usual symptoms and signs of salicylate intoxication. Observation and treatment should include induced vomiting or gastric lavage, specific parenteral electrolyte therapy for ketoacidosis and dehydration, watching for evidence of hemorrhagic manifestations due to hypoprothrombinemia which, if it occurs, usually requires whole-blood transfusions.

**DESCRIPTION:** Each Equagesic tablet contains 150 mg meprobamate, 75 mg ethoheptazine citrate and 250 mg aspirin.

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\*This drug has been evaluated as possibly effective for this indication.

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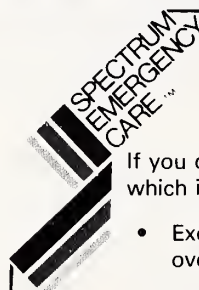
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The Northwestern Medical Association convenes for its 35th Annual Meeting at Sun Valley, Idaho, from February 8 to 12, 1982. Diabetes and related vascular, neurologic, eye, and ENT problems, ski-injury prevention, and high-altitude physiology will be discussed by experts. Approved for 10 CME Category I credits. Registration 3 to 5 p.m., February 8, Challenger Inn, Sun Valley. Non-members registration \$100. For information, write to Norman Christensen, M.D., Secretary, 2456 Buhne Street, Eureka, California 95501.



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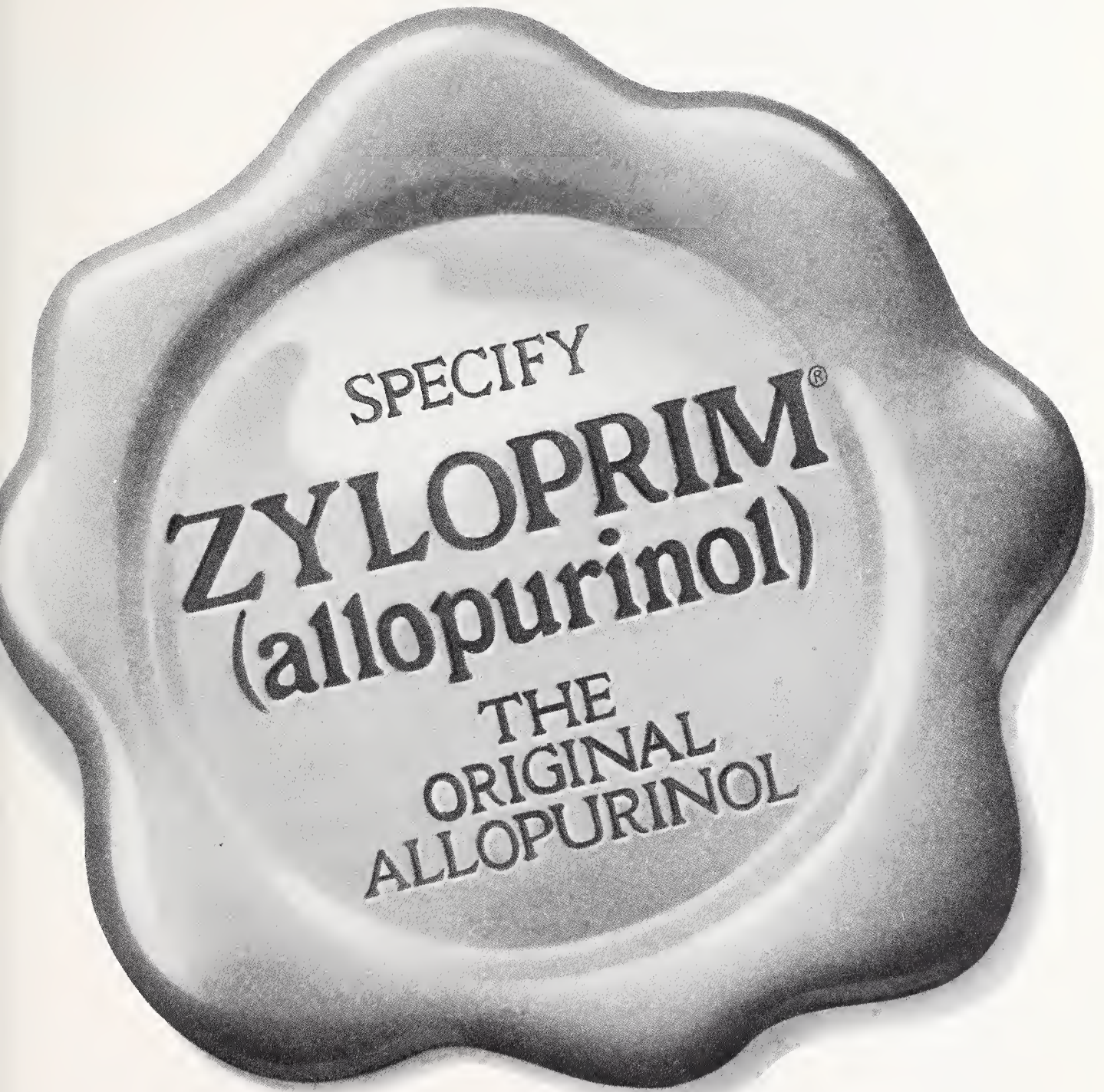
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### Lange Medical Publications

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Each prolonged action tablet contains:

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Phenylpropanolamine Hydrochloride	50 mg
Chlorpheniramine Maleate	8 mg
Hyoscyamine Sulfate	0.19 mg
Atropine Sulfate	0.04 mg
Scopolamine Hydrobromide	0.01 mg

Ru-Tuss Tablets act continuously for 10 to 12 hours.

Ru-Tuss Tablets are an oral antihistaminic, nasal decongestant and anti-secretory preparation.

**INDICATIONS AND USAGE** Ru-Tuss Tablets provide relief of the symptoms resulting from irritation of sinus, nasal and upper respiratory tract tissues. Phenylephrine and phenylpropanolamine combine to exert a vasoconstrictive and decongestive action while chlorpheniramine maleate decreases the symptoms of watering eyes, post nasal drip and sneezing which may be associated with an allergic-like response. The belladonna alkaloids, hyoscyamine, atropine and scopolamine further augment the anti-secretory activity of Ru-Tuss Tablets.

**CONTRAINDICATIONS** Hypersensitivity to antihistamines or sympathomimetics. Ru-Tuss Tablets are contraindicated in children under 12 years of age and in patients with glaucoma, bronchial asthma and women who are pregnant. Concomitant use of MAO inhibitors is contraindicated.

**WARNINGS** Ru-Tuss Tablets may cause drowsiness. Patients should be warned of the possible additive effects caused by taking antihistamines with alcohol, hypnotics, sedatives or tranquilizers.

**PRECAUTIONS** Ru-Tuss Tablets contain belladonna alkaloids, and must be administered with care to those patients with glaucoma, or urinary bladder neck obstruction. Caution should be exercised when Ru-Tuss Tablets are given to patients with hypertension, cardiac or peripheral vascular disease or hyperthyroidism. Patients should avoid driving a motor vehicle or operating dangerous machinery (See Warnings).

**OVERDOSAGE** Since the action of sustained release products may continue for as long as 12 hours, treatment of overdoses directed at reversing the effects of the drug and supporting the patient should be maintained for at least that length of time. Saline cathartics are useful for hastening evacuation of unreleased medication. In children and infants, antihistamine overdosage may produce convulsions and death.

**ADVERSE REACTIONS** Hypersensitivity reactions such as rash, urticaria, leukopenia, agranulocytosis, and thrombocytopenia may occur. Other adverse reactions to Ru-Tuss Tablets may be drowsiness, lassitude, giddiness, dryness of the mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, tachycardia, hypotension/hypertension, faintness, dizziness, tinnitus, headache, incoordination, visual disturbances, mydriasis, xerostomia, blurred vision, anorexia, nausea, vomiting, diarrhea, constipation, epigastric distress, hyperirritability, nervousness, dizziness and insomnia. Large overdoses may cause tachypnea, delirium, fever, stupor, coma and respiratory failure.

**DOSAGE AND ADMINISTRATION** Adults and children over 12 years of age, one tablet morning and evening. Not recommended for children under 12 years of age. Tablets are to be swallowed whole.

### HOW SUPPLIED:

Bottles of 100 Tablets

Bottles of 500 Tablets

Federal law prohibits dispensing without prescription.

NDC 0524-0058-01

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# COUGH

## RU-TUSS<sup>®</sup> EXPECTORANT

### DESCRIPTION

Each fluid ounce of Ru-Tuss Expectorant contains:

Codeine Phosphate	65.8 mg
<b>(WARNING: MAY BE HABIT FORMING)</b>	
Phenylephrine Hydrochloride	30 mg
Phenylpropanolamine Hydrochloride	20 mg
Pheniramine Maleate	20 mg
Pyrilamine Maleate	20 mg
Ammonium Chloride	200 mg
Alcohol	5%

Ru-Tuss Expectorant is an oral antitussive, antihistaminic, nasal decongestant and expectorant preparation.

**INDICATIONS AND USAGE** Ru-Tuss Expectorant is indicated for symptomatic relief of upper respiratory congestion associated with pharyngitis, tracheitis, bronchitis, and allergic rhinitis. Also, for the temporary relief of symptoms associated with hay fever, allergies, nasal congestion and cough due to the common cold.

**CONTRAINDICATIONS** Hypersensitivity to antihistamines. Concomitant use of an antihypertensive or antidepressant drug containing a monoamine oxidase inhibitor is contraindicated.

Ru-Tuss Expectorant is contraindicated in patients with glaucoma, bronchial asthma and in women who are pregnant.

**WARNINGS** Ru-Tuss Expectorant contains codeine phosphate, therefore, the patient should be warned of the potential that this drug may be habit forming. Ru-Tuss Expectorant may cause drowsiness. Patients should be warned of the possible additive effect caused by taking antihistamines with alcohol, hypnotics, sedatives and tranquilizers.

**PRECAUTIONS** Patients taking Ru-Tuss Expectorant should avoid driving a motor vehicle or operating dangerous machinery (See Warnings). Caution should be taken with patients having hypertension, diabetes, hyperthyroidism and cardiovascular disease.

Caution should also be used in patients with pulmonary, hepatic or renal insufficiency. **ADVERSE REACTIONS** Ru-Tuss Expectorant may cause drowsiness, lassitude, giddiness, dryness of mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, tachycardia, hypotension/hypertension, faintness, dizziness, tinnitus, headache, incoordination, visual disturbances, mydriasis, xerostomia, blurred vision, anorexia, nausea, vomiting, diarrhea, constipation, epigastric distress, hyperirritability, nervousness and insomnia. Overdoses may cause restlessness, excitation, delirium, tremors, euphoria, metabolic acidosis, stupor, tachycardia and even convulsions.

**DOSAGE AND ADMINISTRATION** Adults: 1 or 2 teaspoonfuls, orally, every 4 hours, not to exceed 10 teaspoonfuls in any 24-hour period.

Children 6 to 12 years of age: ½ the adult dose, not to exceed 6 teaspoonfuls in any 24-hour period. Children 2 to 6 years of age: ½ teaspoonful every 4 hours, not to exceed 3 teaspoonfuls in any 24-hour period. Children under 2 years of age: Use as directed by a physician.

### HOW SUPPLIED

Pint bottles (16 fl. oz.)

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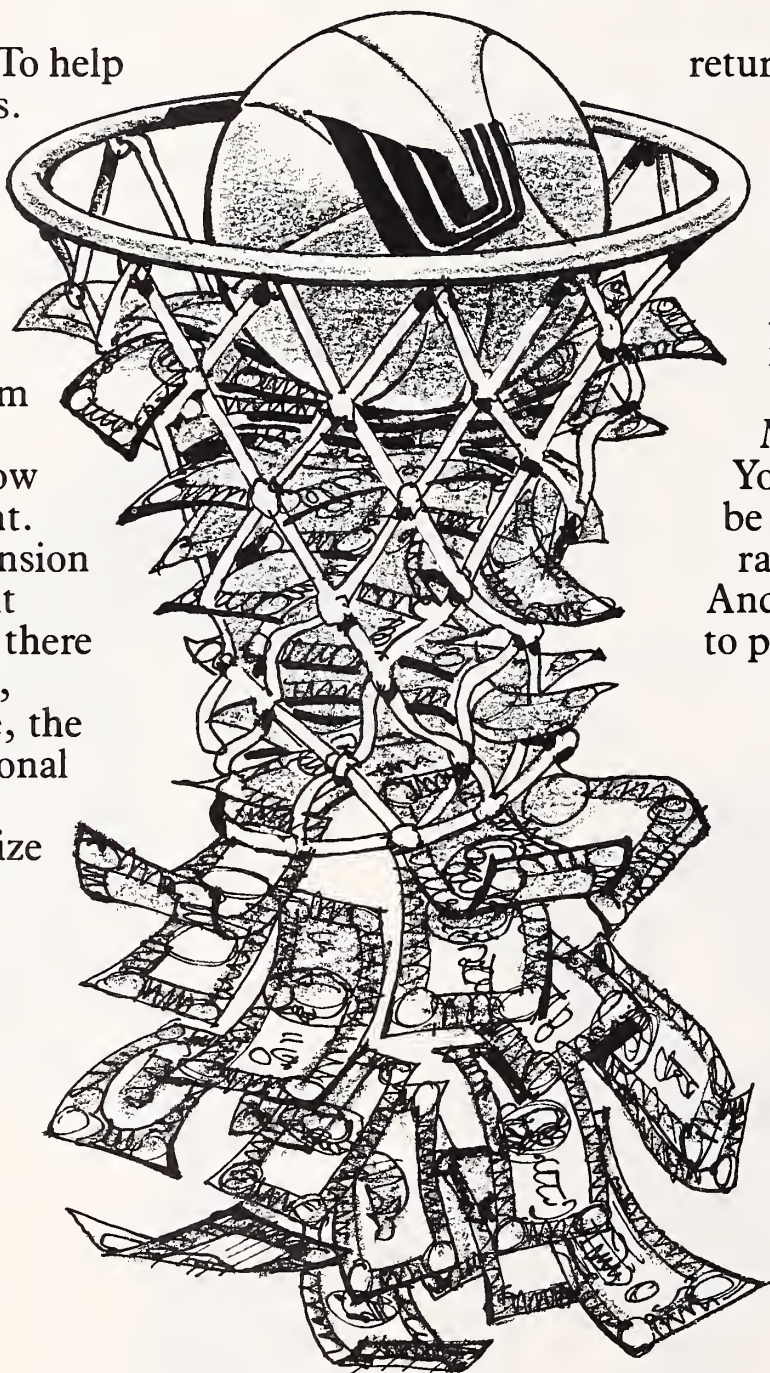
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**Archie W. Butcher, M.D.**, 80, Abilene, UKSM 1935, died May 29, 1981.

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**John S. Chen, M.D.**, 48, Hutchinson, National Medical College (Shanghai) 1956, died July 28, 1981.

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**Lawrence G. Heins, M.D.**, 84, Abilene, Jefferson Medical School (Philadelphia) 1921, died May 28, 1981.

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**Louis S. Roberts, M.D.**, 85, Wichita, St. Louis University School of Medicine 1920, died July 8, 1981.

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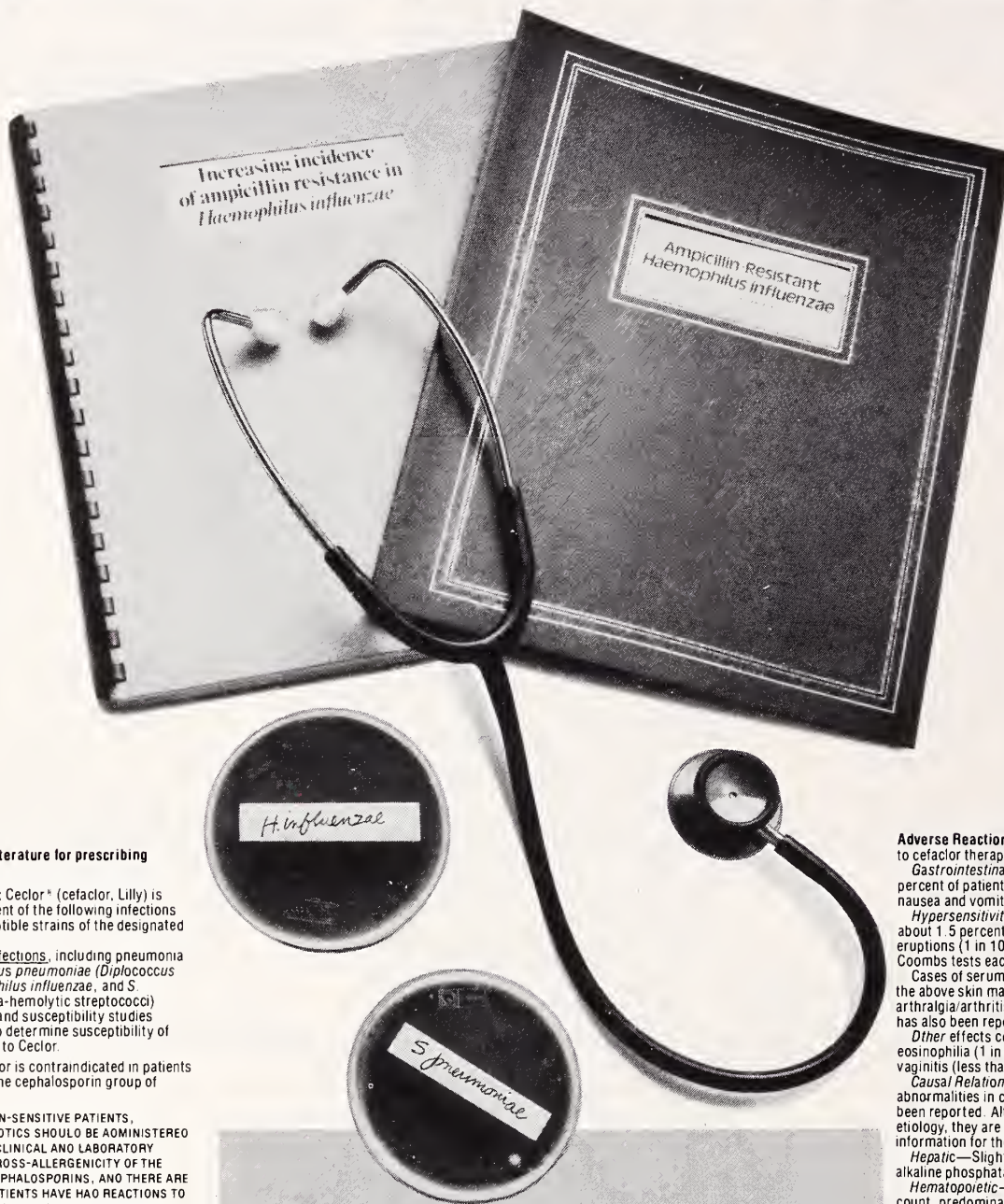
**Paul H. Wedin, M.D.**, 72, Wichita, UKSM 1938, died August 3, 1981.

---

**M. Erik Wright, M.D.**, 66, Lawrence, University of California (Berkeley) 1950, died May 11, 1981.



# An added complication... in the treatment of bacterial bronchitis\*



**Brief Summary.** Consult the package literature for prescribing information.

**Indications and Usage:** Cefclor® (cefclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

**Lower respiratory infections,** including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci).

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cefclor.

**Contraindication:** Cefclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

**Warnings:** IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS TO BOTH DRUG CLASSES (INCLUDING ANAPHYLAXIS AFTER PARENTERAL USE).

Antibiotics, including Cefclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

**Precautions:** If an allergic reaction to cefclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of cefclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs test may be due to the drug.

Cefclor should be administered with caution in the presence of markedly impaired renal function. Under such a condition, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Cefclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

**Usage in Pregnancy:** Although no teratogenic or antifertility effects were seen in reproduction studies in mice and rats receiving up to 12 times the maximum human dose or in ferrets given three times the maximum human dose, the safety of this drug for use in human pregnancy has not been established. The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus.

**Usage in Infancy:** Safety of this product for use in infants less than one month of age has not been established.

**Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis\*—are sensitive to treatment with Cefclor.<sup>1,6</sup>**

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Cefclor.<sup>7</sup>

# Cefclor®

## cefclor

Pulvules®, 250 and 500 mg

**Adverse Reactions:** Adverse effects considered related to cefclor therapy are uncommon and are listed below.

**Gastrointestinal** symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70) and nausea and vomiting (1 in 90).

**Hypersensitivity** reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs tests each occur in less than 1 in 200 patients.

Cases of serum-sickness-like reactions, including the above skin manifestations, fever, and arthralgia/arthritis, have been reported. Anaphylaxis has also been reported.

**Other effects** considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

**Causal Relationship Uncertain**—Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

**Hepatic**—Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

**Hematopoietic**—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

**Renal**—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

[1030808]

\* Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.

**Note:** Cefclor® (cefclor) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

#### References

1. Antimicrob. Agents Chemother., 8: 91, 1975.
2. Antimicrob. Agents Chemother., 11: 470, 1977.
3. Antimicrob. Agents Chemother., 13: 584, 1978.
4. Antimicrob. Agents Chemother., 12: 490, 1977.
5. Current Chemotherapy (edited by W. Siegenthaler and R. Luthy), II: 880. Washington, D.C.: American Society for Microbiology, 1978.
6. Antimicrob. Agents Chemother., 13: 861, 1978.
7. Data on file, Eli Lilly and Company.
8. Principles and Practice of Infectious Diseases (edited by G. L. Mandell, R. G. Douglas, Jr., and J. E. Bennett), p. 487. New York: John Wiley & Sons, 1979.



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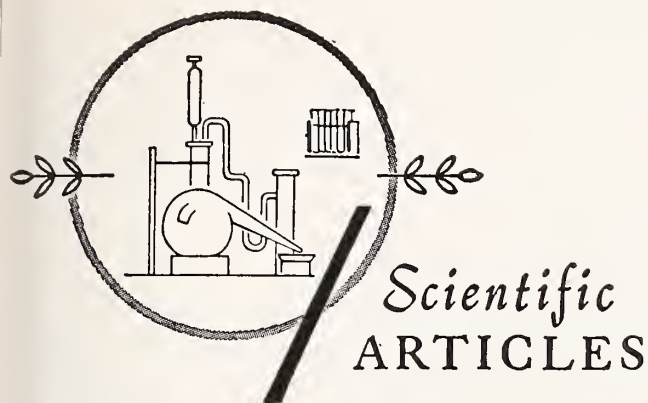
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The Kansas Medical Society Impaired Physicians Program is now operational. If you desire more information concerning this program, if you know an impaired colleague who needs help, or if you are concerned about yourself or your spouse, please contact one of the Committee members nearest you, as listed below, or the KMS Executive Office. All such contacts will be held in strictest confidence and the caller need not reveal his name, if he/she so desires.

Alcoholism, other drug abuse, and medical/neurological/psychological problems are potentially treatable conditions. All impaired physicians should be encouraged to seek help at the earliest possible time in order to retain or regain full effectiveness to practice medicine. Please contact one of the following:

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# Pancreatic Carcinoma

## *Non-Surgical Treatment*

CHARLES D. SOUCEK, M.D., *Kansas City, Kansas*

DIAGNOSIS AND TREATMENT of carcinoma of the pancreas have improved significantly in the last few years. These new techniques will drastically affect the way in which carcinoma of the pancreas is treated in the future. Improvements in diagnosis include computed tomography, percutaneous transhepatic cholangiography, and percutaneous aspiration biopsy. These modalities allow accurate diagnosis and staging of this tumor as well as accurate tissue diagnosis. The major improvement in treatment consists of percutaneous transhepatic biliary drainage which allows biliary function to be restored with a low mortality rate and a high degree of effectiveness. Another improvement in therapy is radio-graphically guided chemical splanchnicectomy for relief of pancreatic pain. These various modalities should have a significant impact on the number of patients who are subjected to surgery. It is quite probable that the overall average survival and quality of survival would be significantly improved by treating all carcinoma of the pancreas patients non-surgically.

### **Carcinoma of the Pancreas**

Cancer of the pancreas has been increasing, and in 1977 accounted for 21,800 deaths. Gudjonsson,<sup>1</sup> in a review of 61 clinical studies representing approx-

imately 15,000 patients with carcinoma of the pancreas, found only 65 five year survivors in this group. Eight of these had undergone bypass only so

---

**Traditional treatment of carcinoma of the pancreas has been surgical; however, results have been far from impressive. Surgical morbidity and mortality rates have been high. Nonsurgical treatment promises mortality rates of 1 per cent, morbidity rates of 4 per cent, and marked reduction in hospital costs.**

---

these do not represent surgical cures. Statistically, 30 per cent<sup>2, 3</sup> of the 57 "cures" will also eventually die of cancer of the pancreas so that only 40 patients were actually cured. The cost of curing these 40 patients was:

- 2,463 surgical mortalities (22% of all operations minus 1%).<sup>1, 4-10</sup>
- An estimated 3,049 post-operative complications (30% of all operations minus 4%).<sup>4, 5, 11</sup>
- An additional 117,300 hospital days<sup>11, 12</sup> (probably spent in the surgical intensive care unit; estimated cost at present prices — \$45 million).
- \$11,730,000 in additional physicians fees (\$1,000 per patient).
- Approximately 210 pancreatic resections for benign disease (12% of 1,752 — the total number of resections).<sup>1, 13, 14</sup>

---

Address reprint requests to Dr. Soucek, Radiology Dept., Bethany Medical Center, 51 No. 12th Street, Kansas City, KS 66102.



- An estimated 42 deaths in these patients who did not have carcinoma of the pancreas (20% of 210).<sup>15, 16</sup>

It would seem, in these days of cost containment consciousness, that this type of treatment needs reevaluation. In only 13 per cent of patients was a biopsy obtained directly from the pancreas; the rest of the time a biopsy was obtained from some other organ or no biopsy was obtained at all. Clinical error in diagnosis is 40.0-62.5 per cent, and the error by inspection and palpation at the time of surgery is as great as 25 per cent. Some series report that as many as 25 per cent<sup>1, 17</sup> of the pancreatoduodenectomies were done in error on patients with benign conditions. This is due to an erroneous diagnosis due to a false positive frozen section or surgically by inspection and palpation. Since the clinical error is approximately 50 per cent, there must have been another 15,000 patients who were operated on in order to find the 15,000 cases that form the basis of Gudjons-son's report. There must have been 400-1,000 surgical mortalities in this group also.

Many surgical articles state that pancreatoduodenectomy is a good palliative procedure because the average survival in the resected group is longer than in the bypass group; however, this is because the groups are not similar. The early tumors are resected and the bypass operations are performed if there are metastases already present. Since diagnosis, staging, and treatment can be done non-surgically with approximately a 1 per cent mortality rate, 4 per cent morbidity rate,<sup>18</sup> approximately two weeks shorter hospitalization and a marked reduction in cost, it would seem reasonable that most patients should be treated in this manner. At least 90 per cent, and possibly 95 per cent<sup>6, 19</sup> of these patients will live less than one year, so that two weeks represent a significant portion of their remaining life. Average survival for all patients from the time of diagnosis is 3.2 months.<sup>6</sup>

The above statistics have not considered the possibility of incorrect diagnosis. Carcinoma of the pancreas means only ductal adenocarcinoma of the pancreas, and other tumors such as cholangiocarcinoma, ampullary carcinoma, duodenal carcinoma, mucinous cystadenocarcinoma, and numerous other tumors must be rigorously excluded as these all have a better prognosis. Some surgical articles make no attempt to exclude these other tumors and report them all as carcinoma of the pancreas. If we assume that the pathologist is 99.9 per cent correct in his diagnosis, this still leaves 15 incorrect diagnoses in this group of patients, and it is reasonable to assume

that most of these would be among the five year survivors. A diagnostic accuracy of 97 per cent would leave 450 incorrect diagnoses. Even errors such as mistaking a cholangiocarcinoma for a ductal adenocarcinoma of the pancreas would markedly alter the statistics.

### Computed Tomography

With the introduction of high resolution CT units with fast scan times, the diagnosis of pancreatic disease has been revolutionized. In the ordinary patient the pancreas can be visualized in minute detail, and retroperitoneal spread can be visualized, as can involvement of the celiac artery. Hepatic metastases can also be visualized, as can dilatation of the biliary and pancreatic ducts. The location of the tumor in the pancreas can be visualized, and ascites can be demonstrated if present. This information is of great help in staging the tumor.

### Percutaneous Transhepatic Cholangiography (PTC)

This procedure has proven safety and has gained rapid acceptance because of its lack of morbidity and also because of the excellent demonstration of anatomic detail. It is probably the single most useful test in diagnosis of obstructive jaundice. It has a mortality rate of less than 0.1 per cent and a morbidity rate of less than 2 per cent. Morbidity can be reduced by biliary drainage in those patients who have grossly obstructed bile ducts. This procedure, rather than ultrasound, should probably be used in all patients because a significant number of patients will have obstructive jaundice with normal sized ducts.<sup>20, 21</sup> In these cases ultrasound will give false results.

### Percutaneous Transhepatic Biliary Drainage (PTBD)

This procedure should be performed on all patients with obstructed ducts unless the patient is going immediately to surgery. This will significantly lower the incidence of bile peritonitis, and also will treat the patient's obstructive jaundice. This procedure has a mortality rate of less than 1 per cent and a morbidity rate of 4 per cent.<sup>18, 22-25</sup> The percutaneous drainage catheter can be advanced into the duodenum nearly 95 per cent of the time, thereby treating the patient's jaundice and — in the case of carcinoma of the pancreas — performing the same function as a surgical bypass. Approximately 90 per cent of surgical patients have only a bypass type of operation. PTBD should be done preoperatively to lower surgical mortality, especially if the total bili-

rubin is above 10 mg/ml. If it is not done, these patients have a high mortality rate due to hepato-renal failure.<sup>11, 23, 26, 27</sup>

### **Percutaneous Aspiration Biopsy**

A combination of seven articles reveals 267 fine needle aspiration biopsies of the pancreas performed with no mortality and no morbidity.<sup>1, 28-31</sup> Fine needle aspiration biopsy is 85 and 90 per cent accurate.<sup>1, 32-35</sup> In another series of 1,200 aspiration biopsies covering the entire abdomen there were no deaths and one 200 ml hematoma.<sup>36</sup> Holm *et al.* reported 2,000 aspiration biopsies of the abdomen with no deaths,<sup>37</sup> and Lundquist<sup>38</sup> reported no deaths in 2,611 aspiration biopsies of the liver. It would seem that this is a safe and accurate procedure. Wedge biopsies and Vim-Silverman biopsies of the pancreas done at the time of surgery are neither safe nor accurate. In a series of 159 operations, Schultz<sup>39</sup> reported six deaths that could be attributed to the biopsy alone. It is of great significance that four of these deaths were in patients with benign disease. This represents a 3.8 per cent mortality rate, and there was also a 9.5 per cent morbidity rate. It would also appear to be less accurate. This same report states that the operative wedge biopsy missed the diagnosis in 54 per cent of the cases, and the Vim-Silverman biopsy missed the diagnosis 32 per cent of the time. It is also significant that the surgeon biopsies the pancreas only 13 per cent<sup>1</sup> of the time. It therefore would appear to be imperative that the pancreas be biopsied percutaneously before surgery.

### **Radiographically Guided Chemical Splanchnicectomy**

Patients with this tumor frequently have severe back pain, and often in the later stages this is not controlled even by huge doses of opiates, and is relieved only by death.<sup>40</sup> This pain can frequently be relieved by chemical splanchnicectomy. This consists of injecting alcohol or phenol in the region of the celiac plexus. Feduska<sup>5</sup> reported relief of symptoms in 78 per cent of patients following chemical splanchnicectomy as compared to 67 per cent relief of symptoms following resection and 53 per cent relief in bypass.

In this series, the relief of pain achieved by chemical splanchnicectomy was often striking and was experienced in seven of the nine patients surviving the procedure. It is noteworthy that the operative deaths in this group were

only among those patients undergoing additional 'palliative' procedures.

Hegedus<sup>41</sup> reported 36 percutaneous chemical splanchnicectomies and Bridenbaugh<sup>40</sup> reported 41 — all with no mortality. Flanigan<sup>42</sup> performed 41 at the time of surgery with no apparent mortality. It would seem that this is a relatively safe and effective method for treating the back pain.

### **Bethany Medical Center Experience**

All of the cases diagnosed as carcinoma of the pancreas in the last ten years were reviewed. The total number was 60; however, it was obvious that some of the cases were misdiagnosed. There were three five year survivors plus one 59 month survivor in patients whose diagnoses were confirmed surgically. Actual survival times were 59, 61, 73, and 90 months. These patients all had bypass operations. This means either that bypass is an effective type of treatment or that inspection and palpation at the time of surgery is an ineffective method of diagnosis. The next longest survivor was 39 months, and this patient also had a bypass operation. There was no resected group as all patients who went to surgery had bypass only. There were eight surgical deaths.

Percutaneous transhepatic biliary drainage was attempted 14 times and was successful each time. In eight of these patients an attempt was made to pass the drainage tube into the duodenum and this was successfully accomplished in each case.

### **Non-Surgical Treatment**

This consists of diagnosis and staging by the use of CT, PTC, and percutaneous biopsy. Treatment consists of biliary drainage for relief of jaundice, chemical splanchnicectomy for relief of pain, and oral enzyme substitution therapy for the relief of indigestion, nausea and anorexia, and also to improve nutrition. This offers a simple, inexpensive and safe treatment, and it is probable that overall average survival would be longer and the quality of survival would also be improved. Several surgeons have published results indicating that the overall survival is longer when patients are treated by bypass rather than resection.<sup>2, 43</sup> It is possible that an internal biliary stent could be substituted for the biliary drain so that these unfortunate people could live their few remaining months in a more nearly normal state.

References are available from the author.



# A Concise Review

## *Common Viral Exanthems and Enanthems*

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### Introduction

SKIN ERUPTIONS are associated with a variety of viral infections; these may be localized as in warts and molluscum contagiosum, or systemic as in measles and varicella. Some of these eruptions are well-known to clinicians and the diagnoses are easily made by clinical observations while others are of such diverse manifestations, pathogeneses, and etiologies that laboratory procedures are generally required for a definitive diagnosis.

The term "rash" is popularly applied to a skin eruption with a shade of red which in medical terminology is referred to as an exanthem. An enanthem, on the other hand, is the eruption of the mucous membrane which may occur alone or along with an exanthem in certain viral diseases. Normally a viral skin eruption starts with a macule produced by local dilation of subpapillary dermal blood vessels. This changes to a papule when edema and cellular infiltration occur. When the epidermis is involved and cellular exudate accumulates, the lesion is referred to as a vesicle (blister or bulla). Pustules are pus-filled vesicles. Vesicles and pustules ulcerate and then scab before healing which may be accompanied with desquamation as in measles. When dermal vessels are involved, hemorrhagic and petechial rashes are observed.

Viral skin eruptions can be divided into four groups: (1) maculopapular as in measles, rubella, certain enterovirus, reovirus and adenovirus infections, and infectious mononucleosis; (2) vesicular as in varicella-zoster, herpes simplex, smallpox, and vaccinia; (3) hemorrhagic as in hemorrhagic dengue, Lassa fever, and hemorrhagic smallpox; and (4) localized lesions as in warts, molluscum contagiosum, and recurrent herpes simplex. However, as a variety of newly discovered viral exanthems and enanthems have been added in recent years, clinical differentiation of various maculopapular rashes has become extremely difficult. Hence the designations of rubelliform and morbilliform were introduced to differentiate the fine, discrete, macular rash of

rubella from the larger, blotchy, semiconfluent macules of measles respectively.<sup>1-3</sup>

The pathogeneses of viral exanthems and enanthems are as diverse as their manifestations. Essentially in many skin eruptions reviewed here, the causative virus is believed to be directly involved;

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**Eruptions of the skin (exanthems) and of the mucous membrane (enanthems) constitute some of the most readily observed and characteristic signs of disease. Many of these eruptions — such as measles and chickenpox — are easily identified, while others — such as those caused by enteroviruses — are so diverse that laboratory procedures are generally required for definitive diagnosis. This review is concerned with the latter group — their etiology, epidemiology, and pathogenesis.**

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indirect involvement through an antibody-antigen reaction (an allergic mechanism) is also suggested in certain eruptions. However, many questions regarding the pathogenesis and pathology of viral exanthems and enanthems remain unanswered. For example, the specific site in the skin for the initial virus growth and the factors responsible for the marked differences in rash distribution in some of these diseases are still unknown. Accentuation of exanthem in sun-exposed areas of the skin has been reported in one case of echovirus type 9 infection and one case of chickenpox.<sup>4</sup> As viremia is believed to be a frequent feature in these eruptions, the virus arrives in the skin either as free particles (plasma-associated, *e.g.* enteroviruses) or cell-associated (infected leukocytes, *e.g.* varicella virus). Here the virus localizes in small blood vessels and subsequently may produce vascular lesions through endothelial swelling, extravasation of fluid and leukocytes, or even hemorrhage and infarction. However, infected leukocytes, in their early stages of infection (when still healthy) would be able to move through small blood vessels like normal leukocytes by diapedesis and thereby carry the infection to the extra-

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TABLE I  
DIAGNOSTIC HALLMARKS OF SELECTED EXANTHEMATOUS DISEASES\*

<i>Disease</i>	<i>Appearance &amp; Distribution of Rash</i>	<i>Other Features</i>
Measles (Rubeola)	Red, raised papules, which may be confluent appear on face and neck first and then spread to body and limbs.	A definite prodrome with cough and coryza. Fever rises as rash appears.
Rubella (German measles)	Pink macules and papules which may be present from head to feet.	Post-auricular, sub-occipital post-cervical lymphadenopathy. Few or no constitutional symptoms in children.
Varicella (Chickenpox)	Successive crops of lesions showing various stages of macules, papules, vesicles and crusts appear first on the trunk and then on the neck, face and limbs (centripetal distribution).	A short prodrome of malaise and fever.
Scarlet fever (Streptococcal disease)	Uniform scarlet papules present on the entire body except inside of elbows and around mouth.	Chills, fever, sore throat. Desquamation follows rash.
Fifth disease (Erythema infectiosum)	"Slapped cheek" appearance. A road-map-like rash may appear on body, disappear and reappear.(†)	Innocuous—no prodrome, no fever. Exclusion from school unnecessary.
Roseola infantum (exanthem subitum, sixth disease)	Measles-like rash primarily on trunk.†	Fever and lymphadenopathy. Fever drops as rash appears (directly opposite of measles).

\*Adapted from Kansas Morbidity Incidence, Volume I, No. 11, November 1979. (Published by Kansas Department of Health and Environment, Topeka, KS).

†See text for detailed descriptions of rashes in erythema infectiosum and roseola infantum.

vascular tissues. Thus an infecting virus which was formerly in the blood is now in the skin tissues and is ready to initiate the ensuing eruption through the stages of macule, papule, and vesicle leading to ulceration and scabbing as described above.

The allergic mechanism is proposed mainly for those rashes that occur after subsidence of fever and rise of antibodies. Here a delayed type of hypersensitivity seems to play an important role which is, in turn, abetted by circulating antibodies causing an added inflammatory character to the skin lesion.

The mechanism involved in the regression of these lesions is not well understood. It is believed that interferon plays an important part and that antibodies and delayed type hypersensitivity have no significant role (the latter are involved in the resistance to reinfection).<sup>5</sup> No vaccine is available for any of the eruptions reviewed here, and their treatment is essentially symptomatic.

As classical rashes associated with measles, rubella, varicella and smallpox (now eradicated from the world\*) are well known to clinicians (see

*Table I* for a comparative presentation of diagnostic hallmarks of these cutaneous eruptions), the present review is concerned with the newer and multi-etiological viral exanthems and enanthems.

### Enterovirus Exanthems and Enanthems

Enteroviruses are small (24-30 nm) naked (non-enveloped) RNA viruses that comprise genus Enterovirus of family Picornaviridae. They include poliovirus (3 types), coxsackievirus A (24 types), coxsackievirus B (6 types), echovirus (34 types), and enterovirus types 68-71. These viruses inhabit the human alimentary tract and, in temperate zones, prevail during the summer and autumn months as seasonal (never permanent) infectious agents. They leave the infected host through throat secretions (only early in the disease) and feces; infection of the new host is acquired through the oral cavity. A variety of diseases — *e.g.* poliomyelitis, aseptic

\*See Behbchani, A. M.: The Smallpox Story: Man Finally Defeats an Old Adversary. *The Journal of the Kansas Medical Society*, 81:447-456, October, 1980.



meningitis, myocarditis, pleurodynia — are caused by these viruses; however, most enteroviral infections are asymptomatic. Infections with certain types of coxsackievirus A and B, echovirus, and enterovirus 71 are associated with rashes and enanthems.<sup>1, 6, 7</sup> These are as follows:

*Febrile Summer Exanthems.* This syndrome, appearing in major or minor epidemics, in clusters or as sporadic cases, is most frequently seen in pre-school children and is the most frequent manifestation of enterovirus infections. It is generally accompanied with some gastrointestinal disturbances. The peak incidence varies from July through September. Fever and rash usually coincide but occasionally the latter occurs during defervescence suggesting a hypersensitivity reaction. Aseptic meningitis (a less frequent syndrome of enterovirus infections) and other enterovirus infection symptoms are sometimes accompanied with rash. In addition, enterovirus infections of the neonates, especially the prematures in whom the infection is often fatal, may manifest maculopapular exanthems or generalized petechiae among other symptoms.<sup>8, 9</sup> One case of non-fatal intrauterine echovirus type 11 infection with generalized maculopapular rash was recently reported.<sup>10</sup> Moreover, vesicular painful enanthems of the mouth followed by a maculopapular rash on the trunk and orchitis in a 13-year-old boy infected with coxsackievirus A type 9 has been reported.<sup>11</sup> However, as a rule, enterovirus exanthems are not associated with CNS or other aforementioned syndromes. The "Boston exanthem" during the late summer of 1951 involved more than 2,000 children and adults and was characterized by the appearance of rash after subsidence of fever (37.8-38.9C), vesiculo-ulcerative enanthems, and also more pronounced and protracted symptoms in adult patients. Another outbreak of this exanthem occurred in Pittsburgh in 1954; however, during the last two decades, only a few cases of this exanthem have been reported.<sup>12</sup>

Many echo (at least 20 types) and coxsackieviruses have been associated with this syndrome. Major epidemics have been linked with echovirus types 4, 9 and 16 (Boston exanthem) and coxsackievirus A type 9. Other types of echovirus (types 1, 2, 3, 5, 6, 7, 11, 13, 14, 17, 18, 19, 22, 25, 30, 32 and 33), coxsackievirus A (types 2, 4, 5, 7, 10 and 16) and coxsackievirus B (types 1-5) have been associated with minor epidemics and sporadic cases of exanthem alone or of both exanthem and enanthem (see below). Several enteroviruses — *e.g.* echovirus types 4, 6, 11 and 14 and coxsackievirus A type 5 — have been isolated from vesicular lesions.

The exanthem in this syndrome caused by dif-

ferent enteroviruses is of various distributions and manifestations and often changes from one type to another; it may be macular, maculopapular, vesicular, vesiculo-ulcerative, petechial, or urticarial. On the other hand, the characteristic distribution and manifestation of certain of the exanthems may be associated with a specific type of enterovirus. The rash of echovirus type 9 is frequently violaceous and appears first and most prominently on the cheeks, then spreads to the trunk and extremities, and occasionally to the palms and soles. In Boston exanthem, caused by echovirus type 16, the maculopapular rash is most prominent on the face, neck, and trunk; palms and soles are occasionally involved. An enanthem consisting of vesicles and shallow ulcers on the mucous membranes of the throat, gingival margins, and buccal mucosa is also observed in Boston exanthem. These eruptions occur as temperature returns to normal. However, by and large, the rash and enanthem in these enteroviral eruptions appear together with fever following an incubation period ranging from two to ten days. Generalized eruptions lasting three to five days are commonly observed; the rash may be extremely fleeting (disappearing after 12-24 hours) or may last for seven to ten days. The fever is generally low (37.8-38.9C) but may go up to 40C. The prognosis is normally excellent.

*Herpangina.* This disease has an incubation period of four to seven days and often involves clusters of children under ten years of age during late spring and summer. The onset is sudden with fever, vomiting, headache, sore throat, anorexia, dysphagia, and pain in the back, abdomen, and limbs. The pharynx is hyperemic with characteristic circular lesions or ulcers surrounded by red areolas. There are usually fewer than a dozen lesions on the anterior faucial pillars, hard and soft palates, tonsils, posterior pharyngeal walls, and occasionally the tongue. In contrast to the distribution of lesions in herpetic gingivostomatitis, no lesion on the lips and buccal mucosa is found in herpangina. The lesions start as small papules and develop into vesicles; ruptured vesicles (ulcers) have a grayish base and a characteristic "punched out" appearance. The fever normally lasts for three to four days. At least nine types of coxsackievirus A — *i.e.* types 1, 2, 3, 4, 5, 6, 8, 10 and 22 — are definitely linked with this disease. Moreover, coxsackieviruses A types 7 and 9 and B types 1-5 as well as echovirus types 9, 16 and 17 have been isolated sporadically.<sup>13</sup> Many cases of neonatal herpangina associated with coxsackievirus A type 5 have been reported from Bangkok, Thailand.<sup>14</sup> Occasionally cutaneous lesions are also observed.

**Hand, Foot and Mouth Disease.** The first reported outbreak of this disease occurred during the summer of 1957 in Toronto, Canada. Subsequently many outbreaks and sporadic cases have been observed throughout the world. This febrile (37.8-40.0°C) disease strikes mainly children under 7 years of age. The enanthem, which is similar to that of herpangina (see above), consists of vesiculo-ulcerative lesions involving the oropharynx, buccal mucosa, and tongue. The exanthem is maculopapular and vesicular, and involves mainly the hands and feet (including the palms and soles), but often spreads to the arms and legs as well as the trunk, buttocks, and face. There is no itching and the vesicles, in contrast to those of herpes simplex virus, heal without crusting. The virus most frequently associated with this disease is coxsackievirus A type 16, but types 4, 5, 7, 9 and 10 have also been implicated. Since 1974, outbreaks of this syndrome occurring in Sweden, Japan, Australia, and elsewhere have been etiologically linked with enterovirus 71. In many of these cases the central nervous system was also involved. It has been suggested that certain strains of this virus are strongly neurotropic and weakly dermatropic while others are equally dermatropic and neurotropic. Moreover, certain mutants of this virus were consistently isolated from the dermal vesicles of this syndrome. The causative virus (either an echovirus or enterovirus 71) has been repeatedly isolated from vesicular fluid.<sup>15-17</sup>

**Miscellaneous.** This includes three categories.

1. Acute Lymphnodular Pharyngitis. This febrile disease associated with coxsackievirus A type 10 has been observed in both children and adults. The discrete dome-shaped lesions are found on the uvula, anterior faucial pillars, and posterior pharynx; they are yellow in color and are surrounded by a zone of erythema. Unlike herpangina, neither vesiculation nor ulceration occurs during resolution which takes place within a week.<sup>18</sup>

2. Zoster-like eruption. One case has been reported of unilateral vesiculo-bullous eruption covering three dermatomes on the neck, shoulder, and upper part of the chest associated with fever in a 7-year-old boy. The lesions resembled herpes zoster; however, only echovirus type 6 was isolated from the vesicular fluid, and the involvement of this virus was confirmed by serum neutralization test.<sup>19</sup>

3. Hemangioma-like lesions. Echovirus types 25 and 32 have been associated with hemangioma-like or telangiectatic-like lesions in four infants. The lesions were sparse and the infants had high fever of brief duration.<sup>20</sup>

Our current knowledge of the pathogenesis of

enteroviral exanthems and enanthems is far from complete. Enteroviruses primarily infect the alimentary tract and the virus is readily isolated from the oropharynx secretions (during the first week of infection) and feces (for several weeks). However, viremia occurs frequently and is the harbinger of the involvement of other organs such as CNS, heart, liver, respiratory tract, and skin. Hence, the infecting enterovirus is suspected of being either directly or indirectly involved in the pathogenesis and pathology of these exanthems and enanthems. Indeed enteroviruses (both coxsackie and echoviruses) have been repeatedly isolated from vesicular lesions in these syndromes (see above). However, as certain maculopapular rashes appear during defervescence and rise of specific viral antibodies, it is believed that hypersensitivity or some type of antigen-antibody reaction may be involved in such cases (see above).

Laboratory diagnosis of these syndromes is achieved by the isolation and identification of the causative enterovirus in cell cultures. This is usually accomplished within two to seven days (as to the involvement of an enterovirus) or within two to three weeks (as to identification of the causative enterovirus).

### Adenovirus Exanthems

There are 34 types (plus 3 candidates — all naked medium-sized, 70-90 nm, DNA viruses) of human adenoviruses that are associated with a variety of human diseases, *e.g.* undifferentiated acute respiratory disease, pneumonia, pharyngoconjunctival fever, exudative pharyngitis, conjunctivitis, epidemic keratoconjunctivitis, and acute hemorrhagic cystitis in children. The exanthem, developing in most cases during a respiratory or ocular infection with these viruses (mainly types 1, 2, 3 and 7), is seen primarily in infants and young children; however, occasionally adults have also been involved. The exanthem is manifested as morbilliform, roseola-like, scarlatina-form, Stevens-Johnson syndrome, urticarial, vesicular, or rubelliform (the last in adults) type. Recently, rash was observed in some of the patients (aged 1-18 years) infected with adenovirus type 16 and manifesting mainly fever, injected pharynx, nausea and vomiting, and conjunctivitis in Long Island, New York in 1979.<sup>21</sup> The etiologic association of adenoviruses with these exanthems has not been established in all cases as a number of these were unrelated to current adenovirus diseases, and in many cases other microorganisms or rash-producing drugs were suspected. However, certain types, *i.e.* 3 and 7, have been repeatedly isolated from exanth-



matous patients.<sup>22, 23</sup> These viruses are readily isolated and identified in cell cultures.

### **Reovirus Exanthems**

There are three human types of these double-stranded naked medium-sized (75 nm) RNA viruses. They have been isolated from the alimentary and respiratory tracts of healthy children as well as children with minor febrile illness, diarrhea, or enteritis. However, studies in human volunteers have failed to establish a causative role for these viruses in human disease.

The association of reoviruses (types 2 and 3) with a febrile rash (maculopapular or vesicular) in children was reported in 1962 and 1967 by two groups of investigators in the United States.<sup>24</sup> As no other reports implicating these viruses in human exanthems has since appeared in the English literature, it seems that such a causative association is either very rare or of doubtful significance.

### **Erythema Infectiosum (Fifth Disease)\***

This disease occurs in late winter and spring as epidemics involving predominantly children aged 4-15 years. It is usually a mild afebrile disease which goes through three stages. The first is a bright red malar rash which gives the patient a "slapped cheek" appearance. The second starts on the following day when the rash spreads to the extremities and trunk. On the sixth day, the third stage begins with the rash (particularly on proximal extremities) fading to form areas of central clearing which create a reticular or lacy pattern. This last feature is most characteristic and nearly pathognomonic for this disease. However, the rash does not always begin on the cheek and tends to reappear, up to three weeks after onset, on exposure to heat, cold, sun, exercise, and stress. Histopathological study of skin biopsies showed edema and non-specific inflammation with infiltration of lymphocytes. Complications are rare; they are mainly arthritis and arthralgia when adults are involved.<sup>25</sup> Two cases of encephalitis in a 9-month-old boy and an 8-year-old boy, the latter with permanent neurological sequelae, have been associated with this disease.<sup>26</sup> The mode of transmission is assumed to be by droplet infection from person to person, and the incubation period is estimated at 4-15 days. Considering the mildness of the disease,

exclusion of affected children, if they otherwise feel well, from school is unjustified.

Many attempts to isolate an etiologically related infectious agent from this disease have failed; however, the causative agent is believed to be a virus.

### **Roseola Infantum (Exanthem Subitum, Sixth Disease)**

This disease, first described by J. Zahorsky in 1910, is believed to be the most common exanthem among children aged 4 months to 3 years. It may occur at any time of the year, but peak incidence has been reported in midautumn and late spring. However, the majority of cases may be subclinical and unrecognizable. Clinical features of this disease are a sudden onset with high fever (39.4-40.6°C) either constant (slightly elevated in the morning and highest in the afternoon) or intermittent for three to five days while the child usually appears quite well, but occasionally irritability and listlessness are observed. Lymphadenopathy involving suboccipital and occasionally posterior cervical lymph nodes is frequently manifested. In a typical case, the sudden defervescence is followed by an equally sudden (hence the name subitum) appearance of discrete small irregular rose-pink macules 2-3 mm in diameter which are most pronounced on the neck and trunk. The macules, which fade on pressure, may coalesce occasionally but do not form clusters. No pruritus or desquamation is seen. The rash may last only for a few hours or as long as 48 hours before it fades without residual pigmentation.

The incubation period is believed to be between 10 and 21 days and the disease rarely spreads to older siblings as these usually are outside the susceptible age group. True epidemics of this disease occur only rarely. Rare complications of convulsion, seizure, and encephalitis have been reported; however, prognosis is generally considered to be excellent.<sup>27</sup>

No agent has been isolated from this disease. However, transmission studies in human volunteers and monkeys suggest a viral etiology. Recently, capsomers and outer-shell aggregates of rotavirus (an agent associated with gastroenteritis in children) were detected by electron microscopy in fecal specimens of nine children, aged 5-21 months, with roseola infantum. It was suggested that rotavirus may be involved in the development of this exanthem.<sup>28</sup> However, a more recent study did not support such an association.<sup>29</sup>

References are available from the author.

\*The first three diseases are measles (rubeola), scarlet fever, and rubella (German measles); the fourth, Filatow-Dukes disease, was apparently a mild atypical scarlet fever which is no longer recognized as a separate disease entity.

# Holistic Medicine

## *Rethinking Attitudes Toward Health Care*

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DEVELOPMENT OF HEALTH CARE services is at an interesting point in our country. Other countries have attempted to provide adequate medical care for their people using systems that emphasize more or less government control and funding of the delivery of the services. An extreme example of such a socialized medical system exists in Great Britain, where a capitation system insures that the doctors are paid a yearly salary — based on a catchment area of people for whom they provide otherwise largely free medical services. This system, administered by the British National Health Service, is experiencing severe problems.

The United States is one of the few countries undertaking a detailed reexamination of its health care delivery system with proposals for a national health insurance (NHI). Opponents of NHI schemes often cite the prohibitive costs of such programs for a return of limited and unpredictable benefits. For example, a recent federal investigation into cost/benefit ratios for NHI has calculated that a doubling of monies spent on medical care will produce an infinitesimal improvement in the health of the population.

It is not our purpose to review in detail the pros and cons of socialization of medical care, but to make the simpler and largely uncontroversial point that we face a crisis in health care, with exponentially rising costs and no parallel improvement in benefits. As a beginning it might thus be profitable to reexamine our approaches to the problem and to redefine our strengths and limitations as physicians. Wildavsky<sup>1</sup> reports that the medical system affects only about 10 per cent of the usual indices for measuring health. The remaining 90 per cent are sensitive to factors over which physicians have little or no control, including individual lifestyle, social conditions, physiological inheritance, and the

physical environment. His report makes the following statement:

Most of the bad things that happen to people are presently beyond the reach of medicine. Efforts directed toward disease prevention and health promotion must extend beyond the traditional medical care system itself to include institutional linkages that promote health, changes in technology and environment, and modification of individual lifestyles.

It is clear that there is a great deal more to being healthy than simply not being sick. It is possible that

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**Holistic approaches to medical care are outlined to illustrate potential benefits to the patient, to differentiate opportunist and fad-dist health regimes, and to highlight problems faced by the modern physician because of a relative lack of expertise in many areas critical to the health of patients.**

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a comprehensive network of health care facilities might simply result in an extremely expensive system of sickness management based on an "auto mechanics" model — that is, that health is pursued as one pursues the "health" of an automobile; by regular inspection and repair by technical experts. The philosophy of current concepts of health care can be partially summarized as a state of well being maintained by skilled adjustment, intervention, and repair — a strategy that holistic approaches question.

What about this concept — holistic? It comes from the Greek "holos," meaning the entirety or completeness of a thing. In 1979 a group of physicians met in Denver to found the American Holistic Medical Association. This group defines holistic medicine as a system of health care that emphasizes personal responsibility, and fosters a cooperative relationship among all those involved, leading to an optimal attunement of body, mind, emotions, and spirit. Holistic medicine encompasses all safe modalities of diagnosis and treatment including drugs and surgery; it emphasizes the necessity of looking at the whole person including an analysis of physi-

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cal, nutritional, environmental, emotional, spiritual, and lifestyle values. Holistic medicine particularly focuses upon patient education and patient responsibility for personal efforts to achieve health.

A further clarification of holistic medicine appeared in a recent Newsletter of the American Holistic Medical Association<sup>2</sup> in which emphasis was placed on:

(1) *Comprehensive diagnosis* using all safe approaches including traditional and non-traditional; (2) *compassionate physicians* who recognize the unity of all; (3) *comprehensive lifestyle counseling* including nutritional, physical exercise, habit control, (moderation in nutrition, drinking, no smoking), environmental awareness and modification, spiritual awareness and attunement; (4) *adjunctive techniques* responsibly selected may include acupuncture, neuromuscular postural integration, biofeedback training and other self-regulation techniques, chelation and other biochemical homeostatic techniques; (5) *traditional medicine*, appropriately selected drugs and surgery. No single one of these factors makes one a holistic physician; a total denial of any safe approach prevents one from being holistic. Not all need to be used; all should be intelligently considered.

We cannot overemphasize the importance of a careful examination of what major attitudinal changes must occur both in the providers and in the consumers of health care for such common sense concepts to be adopted.

Gerald Brenan, in "Thoughts in a Dry Season,"<sup>3</sup> says:

The chief vices of the elderly are dogmatism and complacency, which are a sort of rheumatism of the mind brought on by long-continued habits. The chief vices of the young are gullibility and fanaticism, which due to the fact that, being new to life and inexperienced in its problems, their idealism revolts against the world in which they find themselves, and which they suppose has been created by the greed and stupidity of their elders.

Brenan's statement is a summary of the first potential pitfall of a naive holistic approach to health care. An adversary model in which a group of naive holistic physicians and health care professionals unite against the medical establishment to overthrow a pernicious system oriented to treating all people as varyingly sick would be to recapitulate Brenan's chief vice of the young. Greed and stupidity of the medical establishment has not created the automechanic model of medicine; it is rooted in the history of medicine.

An examination of the history of medicine reveals that originally health care was a privilege accorded mainly to the rich or upper social classes with an armamentarium of techniques, medicaments, and

talismans. The physician, or physician equivalent, was consulted only when the family and community could not handle the problem — that is, sickness was defined by the community as a deviance requiring the special gifts of a shaman-healer. With the enormous advances provided by 20th century medicine, health care has grown from being no longer only a privilege but actually a right of all people. As our planet suffers from self-created problems engendered by population over-growth, environmental pollution and freedom of lifestyles, health now, and health care particularly, may be seen as a necessity, even from a purely economic viewpoint.

We, and others such as Ng,<sup>4</sup> propose two fundamental thrusts to improve health care by application of holistic principles. These two thrusts would be seen as pragmatic necessities. Both thrusts are intimately intertwined, and the separation is for purposes of clarity only. The first is a fundamental reexamination of the attitude toward health and disease in the health care-giving professional; and second, the promotion of community supported organizations to utilize all community agencies that have a part to play in achieving a state of optimum health.

### Attitude Retraining

Comments herein focus on the role of the physician, although many — if not all — could and should be applied to anyone identified as being involved in promoting optimum health. Alex Comfort<sup>5</sup> says,

... a genuine health service would involve by its nature the sharing of responsibility for personal health between the doctor (professional) and the patient (non-professional), the reservation of auto garage medicine for the functions for which it is appropriate and the reduction of the need for specific intervention and a far greater education both of doctor and patient."

Although holistic propagandists would like to make tantric yoga and consciousness-raising chargeable to Medicare, this would simply multiply rackets, and presupposes the ineducability of physicians. Actually what this means is that medical education has now to enter a new phase of evolution. However, difficulties that may be involved in re-education are illustrated by comment on the extraordinary statistic that physicians and dentists in California have by far the worst accident record as civil fliers. A flying instructor at one airport said when asked to comment on this: "Did you ever try to *tell* a doctor anything?" A more rational approach would be to produce doctors who did not need to be *told* because they *perceived*.

At first glance an holistic approach would vastly increase the already overloaded medical school curriculum, and become one more uphill battle for continuing education credits for the established physician. Of course we cannot learn all these skills — but we can coordinate and lead health care efforts. A leadership consulting role for the future holistic physician would encompass “teaching” functions — part of the original meaning of the word “doctor” — and encourage cooperation with para professionals and patients. Stephen Appelbaum, a local psychoanalyst, has recently summarized some of the differences of attitude between the holistic and the conventional professional.<sup>6</sup>

- In conventional medicine, the major responsibility is given to and accepted by the physician, *i.e.*, the physician doing something for or to the patient who takes what is done to or for him (sometimes called the medical model). Anger often results when these needs are not adequately and quickly enough met. As Appelbaum observes, such a passive, subordinate role of the patient might be a causative factor in confused expectations obvious in malpractice suits. An holistic approach would imply a practical open contract between patient and physician (psychological model) where it is made explicit that the final responsibility for health lies with the patient and his own essential efforts.

- Conventional medicine emphasizes the body, thus neglecting the enormous power of the mind in the recovery process as graphically illustrated by Norman Cousins’<sup>7</sup> epic description of his sense of humor and positive attitude in recovery from serious illness. Cousins suffered an acute crippling attack of ankylosing spondylitis unresponsive to traditional medicaments. Most striking in this brief article, published in the prestigious *New England Journal of Medicine*, is that the patient refused to relinquish control over, and responsibility for, his recovery. In the best scientific tradition he conducted controlled experiments on himself (*e.g.* he demonstrated a consistent drop in sedimentation rate after viewing several Candid Camera movies). Most striking are the frequent references to his physician who seems to embody holistic open mindedness. As described by Cousins: “. . . he encouraged me to believe I was a respected partner with him in the total undertaking. He fully engaged my subjective energies.”

Although there is much recent talk of the power of suggestion and the role of the shaman-priest-guru, and a whole smorgasbord of techniques aimed at spiritual enlightenment and treatment of the body and mind, little is made of a principle that can be summarized as follows: the essence of healing, as

opposed to treatment, is the ability to manipulate the body by way of the body-image. In an oversimplified way treatment arrests or abolishes the disease, with recovery taking care of itself, whereas healing involves active efforts to facilitate all mental and physical conditions that will return the patient to optimum health. Tentative research into the treatment of cancer by visualizations such as those of Simonton,<sup>8</sup> and many other, more mystically enshrouded methods, have such concepts implicit in their philosophy. Some local leaders — for example Elmer and Alyce Green of the Menninger Foundation — have proposed a psycho-physiological principle; that is, for every emotion, or mental event, there is a physiological concomitant, and for every physiological event, there is an emotional counterpart. Our new holistic physician-healers would have such a core concept foremost in their medical education and attitude toward health.

Today, intuitive skills take a back seat as scientific style has hypertrophied. The capacity to intuit as well as diagnose is something our new physicians would naturally bring to their patients. In our own work with psychic phenomena,<sup>9</sup> we have been impressed by the importance of telepathic and clairvoyant perception in the process of psychotherapy, and of the natural ability of people in times of need to use such abilities. We have come to regard parapsychological phenomena as part of the functioning of a healthy mind.

The holistic physician must harness his intuitive skills in ways other than the hit-and-miss method of clinical acumen. Psychiatry will no longer be largely the realm of the psychiatrist but will become an implicit part of the functioning of all physicians, and will go a great deal beyond developing a good bedside manner and knowing when to refer patients.

- Holistic practitioners have taken a careful look at some of the long established techniques such as acupuncture rather than assuming that advances in treatment will come only from new scientific inventions.

- In line with the idea that all problems of living affect health, issues such as child birth, aging, nutrition, pollution, lifestyle choice, and education are all within the purview of the new medicine. Illness and cure are no longer the central concerns of the physician.

### The Health Advancement Facility

Health Maintenance Organizations (HMOs) were started in this country in the 1920s, but did not come into national prominence until the late '60s, when competition for the health dollar became more acute.



In an HMO, the subscriber pays a fixed monthly fee for which he receives a full range of hospital and medical services. Approximately 180 such facilities exist in the United States and include mental health as well as generalized health care packages. Such organizations can be seen as models for our proposition.

Research on the functioning of such facilities has tended to be somewhat contradictory, although there is some evidence of cost-containment and a lesser use of hospital facilities, as compared with Blue Cross subscribers.<sup>10</sup> The HMO Act of 1973 (Public Law 93-222) encourages preventive health care, and the federal government has acknowledged responsibility for preventive measures in the National Health Planning and Resources Act 1974 (Public Law 93-641). Recognition of the enormous social and technological changes that human society has undergone in the past century makes it no longer permissible to believe that the various diseases we suffer from — including cancer and chronic ailments — are more prevalent simply because people live longer in more affluent societies. Increase in disease is due in part to environmental and behavioral changes resulting from industrialization and urbanization. A number of countries, and most recently Canada,<sup>11</sup> have funded some long range health planning studies. LaLonde's findings, after painstaking study of the Canadian Medicare experiment, resulted in some rather simple and obvious health priorities: (1) It is better to be slim than fat; (2) the excessive use of medication is to be avoided; (3) the fewer cigarettes smoked, the better; (4) exercise and physical fitness are better than sedentary living and lack of exercise; (5) alcohol is a danger to health, particularly when driving a car; (6) mood-modifying drugs are a danger to health, unless properly supervised; (7) tranquility is better than excess stress; (8) the more responsibility one takes for one's own health, the better; and (9) the less polluted the environment, the healthier it is.

Incidentally his findings supported the idea that merely making "disease care" more available through socialization did not improve the health of Canadians one iota.

Modern holistic health care studies have emphasized the importance of nutrition, and there is a well known relationship between diet, major causes of death, and loss of working capacity in this country. Some have estimated that improved nutrition might cut the nation's health bill by one-third. These and other diverse studies suggest quite clearly that medical technology and improvement of delivery of sickness-oriented health care will not be sufficient to

improve the overall level of health. There is a need for environmental and lifestyle change.

The LaLonde document conceptualized the health field as comprising four general components: *environment*, *lifestyle*, *health care organization*, and *human biology*. An analysis of health problems could proceed in a semi-quantitative style along the following lines: for example, causes of death due to auto accident can be found to be mainly due to risks by individuals; lesser to the design of cars and roads and the availability of emergency medical care, and least of all to human biology. In order of importance, therefore, we have *lifestyle*, *environment* and *health care organization*. Such an approach permits program planners to focus attention on the most important contributing factors.

A global approach to holistic health will have to address two issues: (1) How to stop people from doing things that are detrimental to their health; and (2) how to engage people in alternative behaviors that will increase their health and well being. There are many horrifying examples of the results of lack of attention to factors other than the established causes of disease. Two examples are: (1) In the occupational health field, asbestosis of the lung in Montreal city dwellers resulted from the vaporization of tons of brake linings per day into the air; and (2) the paradoxical way in which health care systems provide economic incentives for sickness rather than health in the form of numerous pensions for various disabilities and paid sick leave.

What is known from community studies is that the peer group (neighborhood, family, community networks) often contributes to healthy or sick lifestyles — for example, office cocktail parties. An approach to harnessing the enormous potential power of a community network around the individual to promote healthy living is illustrated clearly by the way in which the individual responds to stimuli that attract him/her to healthy or unhealthy living. A positive system of reward rather than punishment is more likely to succeed.

Such a health advancement facility<sup>4</sup> would have as its fundamental principle the idea that people can improve their own health; secondly, that people can use others to help them improve their own health, and are capable of learning, if they see sufficient advantage or reward for such a state; and thirdly, that it is essential to involve both public and private sectors in long range investments and in restructuring of economic and social incentives to encourage health. Such an organization would exist in each community and coordinate services for (1) sick peo-

(Continued on page 474)

# Evaluation and Management

## *Shoulder Complications in Hemiplegia*

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### Introduction

THE SHOULDER joint plays a vital role in maintaining function of the upper extremity. In hemiplegic patients, maintenance of painless movement of the shoulder is not only important in maintaining self-care skills, but also in transfer and ambulation. Unfortunately, the shoulder joint is a common site of complication in this group of patients. Many of these complications result in painful limitations of joint mobility. Often a patient achieves good motor recovery from hemiplegia, but may remain disabled because of shoulder complications. Disturbance of shoulder joint function may arise from a lesion in the joint itself, in the soft tissue structures around the joint, or in the neurovascular bundle. Proper evaluation and management can prevent or at least minimize many of these complications.

### Anatomical Considerations

Mention of the shoulder joint often suggests only the glenohumeral joint. However, when the shoulder moves, several other joints also participate to insure a smooth movement of the arm. That is why the shoulder joint is often referred as a joint complex. The main joint participating in shoulder movement is the glenohumeral joint. In addition to this joint the acromioclavicular, sternoclavicular, and scapulothoracic joints also play major roles. The costosternal and costovertebral joints participate to a lesser degree.<sup>1</sup>

Movement of the shoulder girdle involves both humerus and scapula. This coordinated movement is often referred to as scapulo-humeral rhythm. Important muscles participating in the movement include the deltoid, pectoralis major, latissimus dorsi, and four rotator cuff muscles (supraspinatus, infraspinatus, teres minor, and subscapularis). Two bursae are in close proximity to the joint: the important one is the subacromial bursa and the other, the subscapular

bursa. The axilla is a crossing point for the numerous neurovascular structures that serve the upper extremity.

A disorder in any one of the structures described above can lead to pain and limitation of movement of the shoulder joint complex.

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**Satisfactory motor recovery from hemiplegia may be impaired by complications involving the shoulder joint. These complications can often be prevented or minimized by proper evaluation and management.**

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### Complications

Common shoulder complications in stroke patients include: (1) subluxation of the glenohumeral joint; (2) shoulder-hand syndrome; (3) peripheral nerve injuries; (4) contractures; (5) exacerbation of pre-existing diseases of the joint or the periarticular structures; and (6) miscellaneous — for example, rotator cuff injury, heterotopic calcification.

#### *Subluxation of the Shoulder*

This is quite a common complication. Miglietta *et al.*<sup>2</sup> report an incidence of 56 per cent in hemiplegic patients. Some of the features in normal anatomy of the glenohumeral joint provide a natural looking mechanism for the humeral head in the glenoid fossa.<sup>3</sup> The glenoid fossa is angled forward and upward. This angulation, the lip of the glenoid labrum, and the thick anterior capsule help to hold the head of the humerus in the socket even without the muscle support in an unloaded arm. Whenever a stretch or load is added to the arm, the supraspinatus and other cuff muscles and also the deltoid contract to maintain joint stability. In hemiplegic patients, these supportive muscles are no longer functional. As a result, whenever there is traction on the arm, the head of the humerus slides distally in the fossa resulting in subluxation. The rotation of the scapula results in reducing the upward angulation which facilitates this distal sliding of the head of the humerus.

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Many authors (Tobis,<sup>4</sup> Miglietta<sup>2</sup>) suggest that glenohumeral subluxation causes stretching of the capsule and muscles which results in pain and a frozen shoulder in many hemiplegic patients. As noted earlier, subluxation occurs in the flaccid stage of hemiplegia and tends to decrease as the limb becomes more spastic. In early stages, the proper positioning of the patient while in bed or wheelchair is important to prevent constant stretch on the shoulder capsule. In supine position the arm should be positioned in semi-Statue of Liberty position. This can be easily achieved by supporting the forearm on a pillow with the arm slightly abducted. When the patient is lying on the good side, the arm should be supported on a pillow, and when lying on the affected side the arm should be pulled forward so that the weight of the body is off of the paralyzed limb. When the patient is in a wheelchair, the arm should be supported on a lap board or a trough on the arm of the chair. An overhead sling can also be used.

Use of a shoulder supporting sling or "hemisling" is controversial. Tobis<sup>4</sup> and Miglietta<sup>2</sup> et al. feel that the use of a hemisling will prevent stretching of the capsule and thereby prevent shoulder pain. The oponents of this argument feel that the sling impairs the body image both psychologically and physiologically. The flexed posture of the arm produced by a sling will increase the flexor tone of the affected limb and will make ambulation difficult. Hurd and associates<sup>5</sup> concluded that the hemisling had no appreciable effect on prevention of shoulder pain. Taketomi<sup>6</sup> felt that an exercise program directed toward preventing subluxation is effective and the sling can be avoided. Our feeling is that the sling should be used primarily during ambulation, but this decision is made on an individual basis, and only if the limb is flail and causes discomfort or pain during ambulation, is the sling recommended.

### *Shoulder-Hand Syndrome*

In 1897 William Osler described painful restriction of the shoulder following myocardial infarction.<sup>7</sup> Since then pain, swelling, and limitation of the shoulder and hand have been described in many conditions — especially hemiplegia, fractures of the wrist, peripheral nerve injuries, and other traumatic lesions involving the upper extremity.<sup>8</sup> This disorder is often termed the "shoulder-hand syndrome." Other names often used for this condition are reflex neurovascular dystrophy, sympathetic reflex dystrophy, and post-traumatic sympathetic dystrophy. The highest incidence of this malady is found among hemiplegic patients; 11-12 per cent of all patients suffer from it.<sup>9</sup> It is seen in both sexes, but rarely

prior to age 40 years. Onset of symptoms is usually one to three months following stroke.

The exact mechanism of shoulder-hand syndrome is not known. On the basis of clinical observation it is generally agreed that there is increased sympathetic activity in the involved upper extremity. The most widely accepted explanation is the internuncial pool theory:<sup>10</sup> As a result of injury — whether to nervous or the other soft tissue — there is an increase in the sensory input to the spinal cord. This barrage of impulses stimulates the sympathetic cells in the lateral column of the cord through the inter neurons which in turn cause increased sympathetic activity. Another explanation<sup>10</sup> suggests that a cross circuit occurs between the afferent and efferent fibers at the peripheral level causing increased sympathetic activity. Moberg<sup>11</sup> suggests that in limb paralysis the lack of venous and lymphatic pumping mechanisms trigger the swelling and later on the pain and limitation.

One of the early clinical manifestations is pain on movement of the shoulder. Usually abduction and external rotation are more painful than other movements. Soon after this there is loss of range of shoulder motion, but the elbow remains symptom free. The wrist and hand show non-pitting dorsal edema, and the fingers tend to splint in extension. Skin over the hand is usually smooth and shiny. The patient complains of severe pain on extension of the wrist and flexion of the metacarpo-phalangeal joints. In a large number of patients there is also increased temperature of the skin over the hand, and in later stages trophic skin changes may develop.

In the initial stages, anti-inflammatory agents such as salicylates or non-steroidal anti-inflammatory drugs can be used. In addition to medications, an active physical therapy program is essential. Joints should be taken through as much range of motion as possible every day. Use of modalities such as moist heat to the shoulder will reduce pain. An elastic glove will help to reduce edema of the hand. The arm should be maintained in an elevated position while the patient is in bed or wheelchair. If the above methods do not relieve the symptoms, a short course of corticosteroids can be helpful. The recommended dosage varies from 10-200 mg of prednisone. Generally, a dosage of 30-40 mg for 21 days will be sufficient.<sup>7, 9, 10</sup> If symptoms persist in spite of the above treatment, stellate ganglion block is often recommended to decrease the sympathetic hyperactivity. In many cases it will be necessary to repeat injections three to five times to achieve the desired effect.<sup>8, 10</sup> In refractory cases, sympathectomy is also suggested.<sup>8</sup>

### *Peripheral Nerve Injuries*

Brachial plexus or axillary nerve lesions have been frequently reported in the early phase of hemiplegia.<sup>12</sup> Traction lesion of the brachial plexus or the axillary nerve can result from inadvertent injury caused by faulty shoulder positioning or sudden stretching during mobilizing exercises. Because of the generalized weakness of the extremity, it is difficult to diagnose this lesion. Normally, when the motor recovery occurs, it happens first in the proximal and then in the distal musculature. Whenever there is fair to good recovery of the distal muscles and marked involvement of the proximal muscles, a peripheral nerve or plexus lesion should be suspected. Localized atrophy of any muscle group will also often help in diagnosis. An electromyographic examination to check for denervation will confirm diagnosis.

### *Contractures*

Contracture of the shoulder joint is a common complication especially in spastic hemiplegic patients with no significant recovery. Because of the lack of voluntary movement and spasticity, the shoulder joint is usually held in adduction and internal rotation which promotes contracture in that position. If not prevented, this could interfere with dressing and personal hygiene. Although a full range of motion of the shoulder is not necessary, abduction and flexion to about 90 degrees should be maintained by positioning and range of motion exercises daily. Those patients who are at home should be instructed to give themselves range of motion exercises; if that is not possible, the family should be taught to administer these exercises.

### *Exacerbation of Pre-Existing Arthritis*

Since stroke occurs often in the elderly, many patients may have some pre-existing degenerative changes of the shoulder joint and periarticular structures. Because of the paralysis of muscles around the joint and especially because of the frequent subluxation, the ligaments around the joint could be overstretched. This in itself can either initiate degenerative changes or aggravate pre-existing ones. Proper support of the shoulder joint and daily range of motion exercises will at least limit this degenerative process. Salicylates or other anti-inflammatory analgesic agents will help in decreasing pain. If the pain persists, intra-articular injection with steroids will also be helpful.

### *Miscellaneous Lesions*

Injury to the rotator cuff of the shoulder joint has been reported in hemiplegic patients. Najenson *et al.*<sup>13</sup> have reported that arthrographic studies of the shoulder joint in 32 hemiplegic patients with painful shoulders demonstrated rupture of the rotator cuff in 40 per cent. In normal shoulder movement when the arm is abducted more than 90 degrees, it is automatically rotated so that the supraspinatus tendon is not compressed between the head of the humerus and the acromion. In a paralytic shoulder, this natural rotation does not occur. If the arm is abducted more than 90 degrees without rotation, this soft tissue can become pressed between the two bones resulting in a tear of the rotator cuff tendon. This can happen in passively stretching shoulder exercises especially when performing bilateral exercises using pulleys. An overly zealous therapist or family can also inadvertently cause this injury. To avoid this injury, the staff and patient should be instructed to rotate the arm whenever it is taken through range of motion, especially 90 degrees and more.

Fractures of the surgical neck of the humerus,<sup>14</sup> especially in patients with persistent subluxation, also have been reported. Immobilization with accompanying osteoporosis of the bone will make the shoulder prone to such a fracture. Hemiplegic patients<sup>15</sup> may also develop myositis ossificans of the muscles around the shoulder joint.

### **Summary**

Common complications involving the shoulder joint in patients with hemiplegia have been described. Some of these complications are a direct result of the disorder, but some are probably the result of faulty treatment. Proper evaluation and preventive measures can minimize many of these complications in a hemiplegic patient. The stroke sufferer need not suffer this additional misery of a painful shoulder.

### **References**

1. Cailliet, R.: *The Shoulder in Hemiplegia*. Philadelphia, F. A. Davis, pp. 11-52, 1980.
2. Miglietta, O.; Lewitan, A. and Rogoff, J. F.: Subluxation of the shoulder in hemiplegic patients. *NY State J. Med.* 59:457-460, 1959.
3. Basmajian, J. V.: *Muscle Alive*, 3rd edition. Baltimore, Williams and Wilkins Co., p. 201, 1979.
4. Tobis, J. S.: Post hemiplegic shoulder pain. *NY State J. Med.* 52:1377-1380, 1957.

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# Kansas Physician's Assistants

## *Role Evaluation by Examination of Task and Supervision Data*

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THE PHYSICIAN'S Assistant Program was started at Wichita State University in 1973. Since that time, the number of physician's assistants (PAs) working in Kansas, including military PAs, has grown to about 100. Currently, the majority of PA graduates are working in rural areas or small communities, and only about one-third are living in areas that could be considered urban. The largest number of graduates are working in solo practices (47%) or partnerships (26%) rather than in group (17%) or institutional settings (11%). Seventy-one per cent of the graduates of the WSU Program are working with family practitioners.

The Wichita State University (WSU) PA Program is 24 months in length and has been approved and accredited by the American Medical Association. The Program includes one year of basic science, clinical medicine, laboratory medicine, and clinical skills. The second year involves clinical practice with physicians in various locations around the state. The majority of student placements are with primary care physicians in rural areas of Kansas. In Kansas, PAs must pass examinations prepared by the national Board of Medical Examiners and register with the State Board of Healing Arts. Kansas law places the responsibility for supervision of the physician's assistant with the employing physician. As PAs are not licensed, the tasks and patient care responsibilities of the PA are also based on the physician's judgment as to the skill and ability of the PA. As Kansas was the second state, after Colorado, to pass legislation allowing physicians to delegate tasks, this function is familiar to physicians in their relationship to Nursing and Allied Health personnel.

The surveys of physicians and PAs used for this study were developed to identify more clearly the physician/PA relationship and to promote greater understanding of the PA concept.

### **Survey Methodology**

*Task Survey.* In order to research physician's atti-

tudes toward the delegation of tasks to PAs, a survey questionnaire from the University of Texas Southwestern Medical School at Dallas<sup>1</sup> was adapted for use in this study. A sample of 42 tasks and roles that PAs are trained to perform was detailed in the questionnaire. Physicians were asked to indicate whether

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**Presented here is current information relative to the practice and supervision of Physician's Assistants in the State of Kansas. Two major issues are addressed: First, the attitude of Kansas physicians toward the delegation of tasks to Physician's Assistants; and second, the perception of Physician's Assistants of good physician supervision.**

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the tasks should be performed by the PA. The survey assesses the PA role in the office, hospital, and patient home setting. Reviewers made some changes in the survey on the basis of field-test data.

Three measures of internal reliability were generated for the 42 task items. With a field test physician sample, the Spearman-Brown Corrected Correlation Co-efficient was .98. A Kuder-Richardson Formula 20 Alpha Co-efficient for Dichotomous Items was .96 and the odd-even, split-half correlation co-efficient for the items was .95. Based on these figures, the reliability of the instrument was considered adequate for the study.

Content validity of the task survey was determined by the judgment of physicians and PAs who examined the field test data. It was the opinion of the judges that the task survey was a representative and accurate sample of medical tasks that PAs might commonly perform.

The population from which the physician sample was drawn consisted of all Kansas physicians in the specialties of Family Practice, Pediatrics, and Internal Medicine. A sample of 100 physicians was randomly drawn from each of the lists of Kansas physicians in the specialties named. This gave a total sample of 300. Of this number, 175 surveys were returned for a response rate of 58.33 per cent.

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Because the physician population was randomly drawn from the total Kansas population in the specialties under study, the necessary assumptions of normality and homogeneity were considered sufficient for application of the ANOV technique and other statistical analyses. The discriminant analysis and factor analysis were also performed on the physician specialty data.

*Supervision Survey.* The survey to determine PA attitudes toward supervision involved mailing a job information survey to 103 graduates of the WSU/PA Program. Of the 103 surveys mailed, 95 were returned. As 11 surveys were incomplete and could not be used, a total of 84 (81.5% of the sample) was analyzed.

The job information survey included questions about the following: (1) demographic data; (2) level of responsibility; (3) job satisfaction; (4) community variables; and (5) supervision. Questions on the survey dealing with supervision were taken from the Job Description Index<sup>2</sup> which has a long history of use in other professional settings. The major purpose of the survey was to establish the context for what PA graduates consider to be necessary for good supervision.

### Results: Task Survey

Although the response of physicians to the task survey was favorable, physicians did discourage PAs from performing certain tasks. A majority of the responding physicians were opposed to physician's assistants performing proctoscopy, sigmoidoscopy, venous cutdowns, spinal taps, and needle thoracocentesis. Considering the high degree of skill required to execute these procedures, the response was predictable.

*Age.* The task responses of 91 physicians more than 45 years of age were compared with the responses of 84 physicians who were 45 years or younger to determine whether differences existed in regard to tasks they thought PAs should perform. Physicians in all three specialty groups were included in the comparison.

A pooled variance formula T-test was performed for each of the 42 tasks in the survey. The T values for each of the 42 items were not significant at the .05 level. Because of the lack of significant differences, conclusions cannot be made. Physician age is apparently not a significant variable in regard to the delegation of PA tasks.

*Specialty.* Responses were obtained from 53 Internists, 52 Pediatricians, and 70 Family Practitioners for a total sample of 175 physicians. Differences between the three physician groups were determined

with the analysis of variance technique. The only significant differences found were for items considered favorably for PA performance by all three specialty groups. However, the data suggests that pediatricians are more favorable toward PA performance of the history, physical examination, and other diagnostic evaluation techniques than are internists and family practitioners. Internists are more inclined to allow the PA to assist in the management of hospitalized patients which is perhaps understandable since he/she is more likely to practice in the hospital setting.

*PA Employment.* The total sample of physicians was divided into two groups. Assigned to one group were 45 physicians who employ PAs or nurse practitioners, while the second group consisted of 130 physicians who have not employed physician extenders. A pooled variance formula T-test was performed for each of the 42 tasks in the survey. Significant differences were found on 34 of the 42 tasks listed in the survey. Although differences were found between physicians who do and do not employ PAs, both groups were favorable toward task delegation. Physicians who employ physician extenders are consistently more willing to delegate tasks than other physicians. The identified differences provide a profile of the employing physician and establish the PA task areas more likely to be utilized by physicians who employ PAs.

*Discriminant Analysis.* The discriminant analysis technique was applied to the data on physician specialty. Generally, the procedure identifies those survey items that best discriminate one specialty from another. Again, the physician specialties of Family Practice, Internal Medicine, and Pediatrics were studied. Of the 42 items in the survey, 18 were strong in differentiating physicians by specialty. Using these items to establish a prediction grid (Table I) enables the researcher, on the basis of these 18 task items, to be 67 per cent accurate in assigning physicians, on the basis of their responses, to the correct specialty group. With their responses to the 18 survey items, internists could be assigned to the internal medicine group with 64.2 per cent accuracy, while 18.9 per cent responded as pediatricians would, and 17 per cent were similar to family practitioners. Family practitioners were the most predictable at 70 per cent.

Considering the small number of significant differences found in the analysis of specialty data with the ANOV techniques, discriminant analysis may provide a stronger argument that differences in attitudes between specialty groups do exist. The discriminate analysis also provides an index for judging



TABLE I  
PREDICTED GROUP MEMBERSHIPS BASED ON  
DISCRIMINANT ANALYSIS PREDICTIONS

Actual Group	No. of Cases	Predicted Group Membership		
		Group 1	Group 2	Group 3
Group 1	53	34	10	9
Internal Medicine		64.2%	18.9%	17.0%
Group 2	52	7	34	11
Pediatrics		13.5%	65.4%	21.2%
Group 3	70	10	11	49
Family Practice		14.3%	15.7%	70.0%

Per cent of "grouped" cases correctly classified: 66.86 per cent.

the strength of the survey. Future development of the survey should include careful consideration of the 18 strong discriminating variables.

**Factor Analysis.** Factor analysis of the 42 items was performed to investigate the pattern of responses on the survey. The 42 items factored into the six following categories: (1) physical examination; (2) specialized procedures I; (3) hospital related roles; (4) specialized procedures II; (5) health maintenance roles; and (6) laboratory procedures. Future development of the survey should allow for strengthening of these six major areas.

### Results: PA Attitudes

Graduate PAs were asked to rate their level of responsibility for each of the following areas: (1) responsibility for patients in the clinic/office; (2) patient assignments; (3) patients in the hospital; (4) patients in the emergency room; and (5) when the supervising physician is on vacation. The survey allowed responses that would indicate low to high levels of supervision in each of the areas. The five factors were totaled for an overall measure of the level of responsibility. Although the five factors certainly do not cover all of the practice areas of PAs in the patient care setting, they were selected because of the ability to differentiate between the PA with restricted activity and those with more flexible practice guidelines.

It is interesting to note that when PAs with high level of responsibility scores were compared to those with low level of responsibility scores as to satisfaction in their work, there were no significant differences. This would indicate that limitations on the practice of the PA do not necessarily create disharmony in the physician/PA relationship, and that PAs are not looking for more independence in practice. Most of the graduates indicated that the working

relationship with the physician was the most important aspect of their work. This brings up the issue of supervision.

The supervision section of the Job Description Index<sup>2</sup> included the following descriptors of the supervisory relationship: asks my advice; hard to please; impolite; praises good work; tactful; influential; up-to-date; doesn't supervise enough; quick-tempered; tells me where I stand; annoying; stubborn; knows job well; intelligent; leaves me on my own; lazy; around when needed.

Although scores on the supervision scale were generally high, those who are the most satisfied with the supervision of their physician responded significantly in the areas of communication. From their perspective, the best supervisors are those who are tactful, around when needed, praise good work, and otherwise respect the work of the PA. Areas indicating good background knowledge and the influence of the physician were next in importance to the PA.

The satisfaction of PAs with their level of responsibility was significantly related to their satisfaction with supervision. Good supervision, then, creates a feeling on the part of PAs that they are working

TABLE II  
CORRELATION COEFFICIENTS OF JDI —  
SUPERVISION SUB-SCALE WITH  
SURVEY COMPONENTS

Factor	p
Continuing medical education	.01
Job in general	.01
Length of stay	.01
Level of responsibility	.01
Community factors	.01

within their role and have been assigned appropriate responsibilities (*Table II*).

The data would seem to indicate that PAs who are happy with their supervisory relationship with the physician are also more content with the job in general, their role in the community, and indicate that they are more likely to remain in the job for a longer time. Continuing Medical Education is important to PAs as it is required to retain certification. The relationship of CME to supervision may be a reflection of the recognition of the physician that this is an important aspect of the PA role.

## Discussion and Implications

*Task Survey.* Overall, the results of the survey did not indicate major significant differences between the specialties of Family Practice, Internal Medicine, and Pediatrics. It should be noted that the trend of the data indicated the strongest support of PA performance of the survey tasks exists with Pediatricians. Discriminant analysis did offer some evidence that responses of physicians in the three specialties were somewhat predictable.

The study has the following implications for PA programs. The training school must determine whether PA tasks that met with general disapproval of physicians should continue to be included in the curriculum. The need for the rationale and justification of certain tasks may also be in order. For example, the knowledge required to perform a tracheotomy may be required of the PA in life-saving situations when other equipment is not available. Therefore, the need may exist for the PA to be knowledgeable in the procedure, even though it is not commonly performed. The data further suggests the difficulty of establishing definite roles and tasks for PAs based on physician feedback.

The trend in the specialty data indicated greater acceptance by Pediatricians than the other physician groups. The results are not considered conclusive because of several variables which may have influenced the data. First, Pediatricians may have been reacting to the survey favorably, but with the understanding that some of the task items were not generally within their scope of practice. Another complicating factor is the fact that physician extenders were studied as a group. Included in this definition were nurse practitioners, clinicians, and specialty physician assistants. The literature is unclear regarding major differences existing between the roles and functions of these professional groups. Historically,

Pediatricians have been open to the physician extender concept. The current study may indicate the need to further study the nature of the specialty in order to determine: (1) the source of support; (2) the need/demand; and (3) whether this role is being fulfilled by other formally or informally trained health personnel.

Physician age should not be dropped as an area of study. Age, as a variable affecting attitudes, has had mixed results in other studies. However, this variable may have been directly influenced by the urban-rural composition of the state. In the past, data showing physician age as a significant factor has been generated in more urbanized areas. In Kansas, the increased awareness of young urban physicians and the high practice demands of older rural physicians may account for the study results.

The great number of significant differences between employing physicians and those who do not employ, was more complete than anticipated. It is not clear whether these favorable attitudes existed before contact with or employment of PAs. Since physician responses covered the total range from very positive to very negative, it might be hypothesized that an area in the spectrum would identify physicians who do not currently employ, but who are good potential employers. Further study may also indicate the degree of attitude change by measuring physician attitudes both before and after employing a PA.

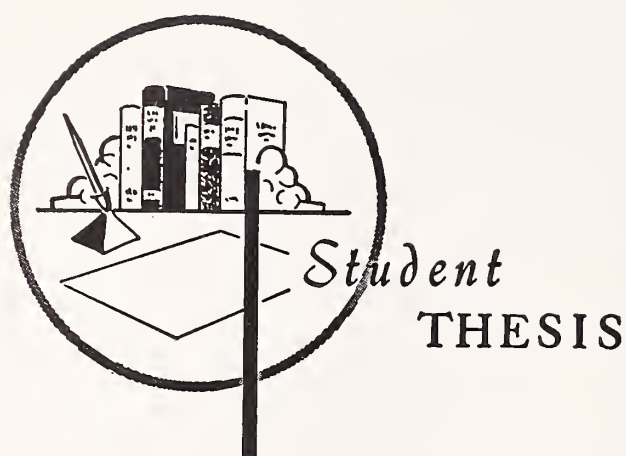
*Supervision Survey.* Supervision is critical to the physician/PA relationship and should be further researched. The authors are not aware of any research that has been done with PAs in this area, and a greater understanding would be beneficial to those hoping to establish more efficient working relationships.

It is clear from the study that communication plays an important role in the physician/PA relationship. In addition, physician's assistants can feel comfortable with strict or flexible practice roles when the supervisory relationship is clear and well defined.

## References

1. Parker, H. and Delahunt, J.: Delegating tasks to physician's assistants: Physicians' reactions. *Tex. Med.* 68:69-79, 1972.
2. Smith, P. D.; Kendall, L. M. and Hulin, C. L.: *The Measurement of Satisfaction in Work and Retirement: A Strategy for the Study of Attitudes*. Chicago, Rand McNally, 1969.





# Emergency Consent

## *Medical Care for the Minor*

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THE EMERGENCY room has rapidly assumed a more prominent role in the American health care system. The sophistication of modern medical progress truly is evident on a daily life-sustaining basis in that area. Coordination of movement, speed of thought, and skillful practice of the art often coalesce in those precious, fleeting moments to continue that process known as life. Yet the emergency room has proven to be quite similar to other aspects of medical practice in that it has become a source of litigation. The drama of emergency medicine has frequently been a part of the drama of the courtroom. The question of whether or not an emergency room has a duty to provide assistance to all who seek help has arisen on numerous occasions. Likewise, persons do arrive at an emergency room and resolutely refuse any care for either themselves or those for whom they are responsible. This category may include those not legally considered *sui juris*. A person who is *sui juris* is defined by *Black's Law Dictionary* as not being "under any legal disability, or the power of another, or guardianship." Minors, the unconscious, and the mentally incompetent generally are not able or not allowed to give consent for their own treatment. This

paper will focus on minors and examine the questions and methods of securing consent for them or because of them in the emergency room setting.

One would ordinarily think that a "life and

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**Minors comprise a special category when consent is sought for emergency medical treatment. They usually are not allowed to give consent for their own medical care. Yet in the emergency setting, the medical and legal systems have found numerous methods either to secure direct health care for the child or to permit consent for treatment by those who might be caring for minors.**

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death" situation would be handled immediately with no questions asked, but this line of thinking may be presumptuous from the legal viewpoint. Justice Benjamin Cardozo laid the foundation for individual rights within the context of medical practice in the landmark *Schloendorff*<sup>1</sup> decision by proclaiming, "Every human being of adult years and sound mind has a right to determine what shall be done with his own body, and a surgeon who performs an operation without his patient's consent, commits an assault for which he is liable in damages."<sup>2</sup> However, the justice added that this tenet was not applicable in the emergency setting if an unconscious patient needed

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surgery and could not consent to that operation.<sup>3</sup> The doctrine of implied consent will apply in such circumstances. The physician is allowed some mind-reading and can assume that the patient would have consented to the procedure had he been legally capable of providing the consent. The consciousness, maturity, or mental competence of the individual veritably leaps from the physical body of the patient and directs the physician to pursue and hopefully persevere in the best interests of the patient. As stated in the classic *Gradwohl's Legal Medicine*, "Generally speaking, where treatment is required immediately to preserve the life of the patient, or to prevent further impairment of health, and it is not possible to obtain the consent of either the patient or someone legally authorized to consent for him, the required procedure or treatment may be undertaken without any liability attaching for failure to obtain consent."<sup>4</sup> Society by mandate has actually handed the physician the "privilege" to practice his skills with little fear of repercussions.<sup>5</sup>

Cardozo did not specifically deal with the minor who entered the emergency room. No doubt, he would have permitted treatment if the child were unconscious. Few problems occur if a minor is brought to the hospital unattended and a parent or guardian cannot be reached. Implied consent takes over again because, "Under the common law, when a physician, in his professional judgment, feels that medical treatment must be administered immediately in order to maintain the life or health of a child, he may proceed to render such treatment in spite of his patient's inability to give consent and/or a lack of parental consent."<sup>6</sup> Few could quarrel if the physician proceeded without consent in the emergency setting if a patient's life were definitely in jeopardy. However, a blanket consent which allows for the maintenance of health may be too generalized, particularly outside of the emergency realm. Treating a cut that could otherwise lead to an infection may be all right to do quickly in the emergency room, but taking care of a "running" nose could probably wait for consent. This can be a risky endeavor legally and does not preclude efforts to obtain parental consent, but an "all points bulletin" issued to track down the elusive parents is looked upon as an unnecessary means to seek consent. One must make certain, however, that all attempts at communication with the parents or guardian are duly documented in the patient's record. This notation has been and continues to be the best protection from litigation that health care workers possess.

Only a minimal attempt is required. A phone call would clearly be sufficient and if there was no answer or the

hospital was otherwise unable to reach the parents or guardian, it would be proper to proceed. In fact, the greater risk of legal liability is in delaying too long because of an attempt to obtain consent.<sup>7</sup>

One other caveat remains, however. The treatment given should probably extend only to its life-saving aspects.<sup>8</sup>

Three court cases much earlier in this century paved the way in this regard. The judge in *Luka v. Lourie*<sup>9</sup> wrote,

The fact that surgeons are called upon daily in all our large cities to operate instantly in emergency cases in order that life may be preserved, should be considered. Many small children are injured upon the streets in large cities. To hold that a surgeon must wait until perhaps he may be able to secure the consent of the parent, before giving to the injured one the benefit of his skill and learning, to the end that life may be preserved, would, we believe, result in the loss of many lives which might otherwise be saved. It is not to be presumed that competent surgeons will wantonly operate, nor that they will fail to obtain the consent of the parents to operations where such consent may be reasonably obtained in view of the exigency. Their work, however, is highly humane and very largely charitable in character and no rule should be announced which would tend in the slightest degree to deprive sufferers of the benefit of their services.<sup>10</sup>

Nearly twenty years later, a judge answered affirmatively to his own question,

If the surgeon is not to be permitted to honestly use his best judgment upon the necessity for an operation, without waiting to get the consent of either the patient or his parents, then is the skilled hand of the expert stayed by an unreasonable rule, often to the detriment of the patient and humanity at large.<sup>11</sup>

These views were strengthened in 1941 in *Bonner v. Moran*,<sup>12</sup> ironically a case that denied a 15 year old the legality of his volunteering to donate blood and skin for grafting. Then, the judge allowed surgeons to operate without consent only in emergency cases.

These instances should not cause major problems in Kansas emergency rooms. A philosophy of care before legal representation in a minor's emergency situation has generally proven successful from a medical, legal, and social standpoint. The hospitals in Missouri now possess an additional safeguard for handling emergencies when parents or guardians are unavailable to consent for their children. A 1977 law allows an adult to consent for a minor sibling, a grandparent for a minor grandchild, or any adult "standing *in loco parentis* formally or not" may consent in case of an emergency.<sup>13</sup> This last category gives the emergency room staff much leeway because anyone from a baby sitter to a court-



approved guardian could fit the *in loco parentis* description and shave off time that might otherwise be wasted in futile attempts to locate the legal guardian.

Although the minor is viewed as not *sui juris*, some exceptions exist which allow minor consent to treatment. These categories do not always apply in emergencies, but they can definitely be influential. The most influential is that of the emancipated minor.

An 'emancipated' minor generally is one who is treated as an adult by reason of an agreement with or contract by the parents that has established the minor's independence from them. Evidence of emancipation usually consists of marriage, military service, maintaining a separate residence from the parents, and management and control over the minor's own activities.<sup>14</sup>

Here, the person has legally been raised to the adult standard set out by Cardozo. Certainly, if a woman has not achieved the age of majority, but she does have a child, she may give consent for the child. She should logically be allowed also to consent for herself. This would likewise be analogous to emergency care. Maturity can also be considered as a factor in obtaining consent. The rather nebulous term "mature minor" has most often come to mean that a patient older than 15 years but not of the legal age of majority has the mental ability to comprehend the scope of the proposed medical care.<sup>15</sup> For years, there was a six year span from the age of 15 to that of majority, and this led to numerous court decisions.<sup>16-18</sup> Now, most states have chopped the time difference in half; therefore, fewer cases are presented on behalf of the mature minor. The courts have primarily dealt with the mature minor in the non-emergency setting, so parental consent should still be conscientiously sought in those instances.<sup>19, 20</sup>

If parents steadfastly refuse to consent for their own treatment, their children are powerless. The minor does not really have any more personal input if the parents decline treatment for the child. Thus, in times of doubt, the courts have been thrust into the role of friend to the child to secure the consent. Judges have dissected laws, volumes of legal theory, and past decisions to ingeniously find a way to allow treatment for the minor. If one way does not seem convincing or convenient for a particular case, a judge will often devise another plan to take care of the child regardless of what the parents say.

Any discussion of cases involving the lack of parental consent for the treatment of minors would be incomplete without a discussion of the Jehovah's

Witnesses. In medical circles, if one would play a word association game and the phrase "Jehovah's Witness" would be given, there would be a very good chance of getting the phrase "blood transfusion" for a response. The Witness will not accept the transfusion, basing the decision on numerous Biblical citations. Genesis contains the passage, "Only flesh with its soul — its blood — you must not eat."<sup>21</sup> Varieties of interpretations of the original Hebrew wording have persisted for generations. In some camps, the word "eat" has been considered synonymous with the literal Latin translation of "ingest" or to take into the stomach. Others, including the Jehovah's Witnesses, believe that eating may be expanded beyond the alimentary pathway to that of any pore, including those leading to the circulatory system. According to the Jehovah's Witness publication, *Blood, Medicine and The Law of God*, "Children are under the jurisdiction of their parents and parents have the legal and God-given right and duty to make the decisions called for in the rearing of their offspring. This is true not only in matters of daily routine but also when crises arise."<sup>22</sup> In this way, the parents may withhold a blood transfusion for a child even if the refusal would mean death to the child. Those courts asked to intervene on behalf of the children have been forced to consider and ultimately weigh the personal convictions of the parents versus the fundamental interest of the minor to keep his physical integrity.<sup>23</sup> The Witnesses recognize that the courts have the ability to step in and let the doctor treat the minor, but they warn that "he does so in violation of the law of God and in disregard of rights conferred on parents, not alone by men, but by God himself."<sup>24</sup> One must also be cautious to avoid being lulled into a false sense of security when parents deny the treatment for the child. Court protection will usually be forthcoming, but it is anything but automatic.

Although the court order will almost assuredly be given, it is necessary, even in the case where a child is involved, that the order be applied for. The same is true when a pregnant woman is involved; the courts will usually issue any necessary order to protect insofar as possible the life of the unborn child.<sup>25</sup>

*Wallace v. Lebrez*<sup>26</sup> was one of the early cases involving an emergency and a Witness. Parents refused to allow their child to receive a blood transfusion that could have prevented, with a reasonable amount of certainty, the child's death or permanent impairment. The courts were brought into the fray and ultimately used a two-pronged explanation to permit the treatment. The State of Illinois holds the

capacity to act as *parens patriae* and therefore maintains the "power to protect those subjects who cannot protect themselves and . . . its interest in the proper upbringing of future citizens."<sup>27</sup> Here, the convenience of the applicability of this doctrine to the particular situation at hand is evident. Such an argument would be torn to shreds if employed on behalf of a fetus in its first trimester to prevent an abortion. Today's laws would not protect this "future citizen" at that stage of development because the fetus is not considered to be a subject with certain rights that supercede the self-determination of the mother at that time. But one can question whether there is a legal difference if a transfusion is given to a mother who is in the first, second, or third trimester. The state could step in to protect the minor in question from neglect, abuse, or fraud and the court found that child to be neglected. "We entertain no doubt that this child, whose parents were deliberately depriving it of life or subjecting it to permanent mental impairment, was a neglected child within the meaning of the statute."<sup>28</sup>

The other prong that led to the court's holding involved the First Amendment and the freedom of religion. There, the justices referred to two earlier and somewhat related cases, *Prince v. Massachusetts*<sup>29</sup> and *Reynolds v. United States*.<sup>30</sup> In *Prince*, the principle of self-determination was considered on one count. "Parents may be free to become martyrs themselves. But it does not follow that they are free, in identical circumstances, to make martyrs of their children before they reach the age of full and legal discretion when they can make that choice for themselves."<sup>31</sup> On another count, the absolute freedom of religion was not considered to include the "liberty to expose the community or child to communicable disease or as the latter to ill health or death."<sup>32</sup> The *Reynolds* court, one century ago, added, "Laws are made for the government of actions, and while they cannot interfere with mere religious beliefs and opinions, they may with practices."<sup>33</sup> Thus, a way was found through legal precedent and doctrine to sustain the Lebrez child.

The clever legal machinery that led to the transfusion for Lebrez underwent some slight additions and revisions to obtain the same results *In re Clark*.<sup>34</sup> In this case, a 3-year-old child with second and third degree burns over 40 per cent of the body was transferred from another hospital. The attending physician waited as long as possible — one week after the court order was obtained — to proceed with a transfusion that led to the child's improved condition. The *Clark* court perpetuated the common judi-

cial strategy of exploring potential situations by declaring.

Whether or not the situation was emergent at the time he sought the court authorization, nevertheless it was pregnant with emergency in that the need for blood might become imperative at any moment, and that for the child's sake the attending surgeon did not dare cast himself in the role of a foolish virgin.<sup>35</sup>

This statement could be extended to a virtual *carte blanche* to the physician because he could point out the potentiality of an emergency in any set of circumstances. In addition, the court wavered from the previous First Amendment argument to that of the Declaration of Independence. Although the parents "may, under certain circumstances deprive him (a child) of his liberty and his property, under no circumstances, with or without due process, with or without religious sanction, may they deprive him of his life."<sup>36</sup> The child should be allowed "to grow up with a sound mind in a sound body and to brook no interference with that right by any person or organization."<sup>37</sup>

As the rights of the child continued on a collision course with the parents' religious beliefs, the courts consistently tipped the scales in favor of the child. The parents may not, in essence, call the shots in such a way as to

dictate to the treating physician a course of treatment amounting to medical malpractice. To require these doctors to ignore the mandates of their own conscience, even in the name of free religious exercise, cannot be justified under these circumstances. The patient may not knowingly demand mistreatment.<sup>38</sup>

More importantly, the parent may not demand mistreatment for his or her child.

The pregnant Witness might tell her doctor that no blood transfusions should be administered if she needs them, but she is then making a decision for someone else — the unborn child. Such a confrontation arose in *Raleigh Fitkin-Paul Morgan Memorial Hospital v. Anderson*<sup>39</sup> and was deftly handled by the court. The transfusion was given to the woman nonetheless because "the welfare of the child and mother are so intertwined and inseparable that it would be impracticable to attempt to distinguish between them."<sup>40</sup> In all of these cases, the judges are assuming that because a child is not *sui juris*, he similarly is not competent to determine his own religious beliefs and practices. Once he is old enough or mature enough to make those decisions, the individual would then be considered more able to permit or decline treatment.



After having examined some cases involving the consent in emergency situations for the soon-to-be-born and young children, the pendulum swings to the impact a minor or lack of a minor has on a judge's decision to order an emergency transfusion for an adult. Two key cases are particularly noteworthy because they present a mixed bag of decisions and, therefore, no ironclad rule persists. A 25-year-old woman was hospitalized for a severely bleeding ulcer, and she and her husband refused to consent for any blood transfusions. This led to the application of the directors and the President of Georgetown College to court to secure blood treatment.<sup>41</sup> Judge Wright noted that the woman was a mother of a 7-month-old child and then referred to the doctrine of *parens patriae*. The state "will not allow a parent to abandon a child, and so it should not allow this most ultimate of voluntary abandonments. The patient has a responsibility to the community to care for her infant. Thus the people have an interest in preserving the life of this mother."<sup>42</sup> Abandonment and neglect were considered to be alike and could be used to complete court-enforced transfusions. The judge also ruled for the college and its hospital because of the very fact that Mrs. Jones had been admitted to the hospital. He claimed that she wanted to live and that "her voluntary presence in the hospital as a patient seeking medical help testified to this. Death to Mrs. Jones was not a religiously commanded goal but an unwanted side effect of a religious scruple."<sup>43</sup> This compelled the judge to conclude his opinion, "To refuse to act was a risk I was unwilling to accept. I determined to act on the side of life."<sup>44</sup>

This line of reasoning was carried one step further and reinforced in *Kennedy Memorial Hospital v. Heston*.<sup>45</sup> A 22-year-old unmarried woman suffered a ruptured spleen in an automobile accident and was brought to the hospital in shock. The emergency room personnel knew of Miss Heston's religious beliefs, so the hospital sought court assistance. The passive nature of the hospital and its emergency room in terms of its not actively seeking patients but being prepared to accept them guided the judge. He ruled,

When the hospital and staff are thus involuntary hosts and their interests are pitted against the belief of the patient, we think it reasonable to resolve the problem by permitting the hospital and its staff to pursue their functions according to their professional standards. The solution sides with life, the conservation of which is, we think, a matter of state interest.<sup>46</sup>

The very presence of a young child who needed maternal care and guidance played a very important

role in the eventual decision in *Georgetown*. Not long after that case, a man entered a hospital after having expressed to his physician his convictions that he would not receive everlasting life after death if he got a blood transfusion. Judge Underwood in the *In re Brooks Estate*<sup>47</sup> case wrote, "That there were no minor children involved; and, that should the patient refuse transfusion, this was his sole and exclusive right."<sup>48</sup>

A Washington, DC case in 1972, *In re Osborne*,<sup>49</sup> cleared the way for a 34-year-old married man with young children to decline emergency treatment and die. A tree had fallen on him and this led to injuries including internal bleeding. The court found that the man had articulately and intelligently expressed his religious views in a consistent fashion before and during the course of his illness with full understanding of the consequences of his decision. More importantly, he followed the Boy Scout maxim by being prepared. "The court found that this particular patient had made sufficient financial provisions for the future wellbeing of his two young children, so that they would not become wards of the state if he should die."<sup>50</sup> In this way, there was no abandonment, neglect, exposure of the children to death, or fear that the state would take over child care. Apparently, paternal upbringing does not have the exact same status as maternal guidance. Recently, the court *In re Melideo*<sup>51</sup> allowed a 23-year-old Witness without children to decline treatment. But the court recognized that "the state's interest in promoting the welfare of children could justify an order for compulsory medical care if it were necessary to save the life of a pregnant woman or a mother of young children."<sup>52</sup> An adult may determine what is to be done with his or her own body if either no minor children are present or if the children are provided for.

A vast majority of the cases dealing with emergency consent for minors does involve the Jehovah's Witnesses. However, their battles can be applicable to the court battles of others. A retarded child who has been a source of personal, social, and financial problems could be brought into an emergency room, but the parents could refuse to consent to life-saving treatment. Letting the child die might be a blessing to the parents. Or a child who had been awarded to the custody of one parent might be rushed to the emergency room and the other parent might be the only one reachable. What if that other parent refused to consent to needed treatment? Also, consider the child abuse victim whose parent

(Continued on page 472)



## Current COMMENT

H. B. LINDSLEY, M.D., *Editor*

### *Mollities et Fragilitas Ossium*

BARTH HOOGST RATEN, M.D.,\* *Kansas City, Kansas*

WHEN THOMAS Alexander McBean vaulted out of an underground cavern on a warm day in August 1844, he certainly did not know he heralded one of the most fascinating diseases known to man. All he knew was that something snapped within his chest and for a few minutes he was in agony. After bed rest and wearing a plaster cast the pain receded, but he needed venesection for some time. In the spring of 1845 he had another severe attack of what was called pleuritis. A course of "steel and quinine" resulted in good remission, and in the summer of that year he was able to travel from London to Scotland where "he bounded over the hills as nimbly as his companions." Soon thereafter the pain reappeared, he became cachectic, and died on January 1, 1846, at the age of 45 — seventeen months after the first symptom. The official death certificate states that he died of "atrophy from albuminuria."

No less than four articles were written about this one patient, and each gave the diagnosis as *mollities et fragilitas ossium* or as *mollities ossium*. The first article was by John Dalrymple, a surgeon of the Royal Ophthalmic Hospital in London who studied the bones of the patient at autopsy and reported his findings in 1846 in the *Dublin Journal of Medical Science*.<sup>1</sup> Dalrymple not only described the large cancellous cavities filled with a red gelatinous substance, but he also found many round and oval cells often containing two or three nuclei. Dalrymple knew nothing of the remarkable protein eliminated in the urine of this patient.

We know this protein as Bence Jones protein, but credit for the discovery should go to Dr. William MacIntyre, a well-known 53-year-old consultant with an office on Harley Street, who had been called

in by Mr. McBean's family physician, Dr. Thomas Watson. Dr. MacIntyre examined both the patient and his urine, and as a result of his findings, Dr. Watson sent a urine specimen to Dr. Henry Bence Jones, a young but "able pathologist" at St. George's Hospital in London. In an accompanying letter Dr. Watson wrote:

"... The tube contains urine of very high specific gravity. When boiled it becomes slightly opaque. On the addition of nitric acid, it effervesces, assumes a reddish hue, and becomes quite clear, but as it cools, assumes the consistency and appearance which you see. Heat relieves it. What is it?"

Bence Jones quoted this famous paragraph in his two articles,<sup>2, 3</sup> and MacIntyre<sup>4</sup> in his article three years later repeats the details of his test. Bence Jones continued for many years to unravel the chemical structure of the new substance.

The second patient reported with this mysterious disease was a resident of Amsterdam, the Netherlands, who in the years 1868 and 1869 suffered from a severe skeletal disease which led to paraplegia. He was seen by Stokvis who sent the urine to Willy Kuehne,<sup>5, 6</sup> a personal friend of Bence Jones.

In July, 1879, Kahler saw a patient in Prague who for several days suffered from severe chest pain. This most remarkable patient, an obstetrician, lived for another eight years, often with excruciating bone pains. His thoracic and cervical vertebrae collapsed so seriously that the chin became pressed against the sternum, ultimately leading to a decubitus ulcer of the chin. The urine of this third patient also contained the strange protein. Kahler reported his findings in 1889,<sup>7</sup> sixteen years after von Rustizky,<sup>8</sup> a Russian physician working in the laboratory of von Recklinghausen, described eight separate tumors of the bone marrow of a patient and designated these as multiple myelomas.

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Address reprint requests to Dr. Hoogstraten, UKSM-KC,  
39th & Rainbow Blvd., Kansas City, KS 66103.



The cycle was now complete. The name *mollities et fragilitas ossium* (soft and fragile bone), which caused confusion with osteomalacia, had been replaced by multiple myeloma. The Germans call it Kahler's disease and Russian literature favors the name Rustizky's disease.

### Multiple Myeloma

It is not the purpose of this paper to describe the many details of this extraordinary disease, but rather to call attention to an ever increasing tendency toward intensive treatment with combinations of four to six drugs that is ineffective. The time has come to call a halt to the many claims of success and to go back to the simplest of therapy.

Melphalan was introduced in 1959. Before that time no effective drug treatment existed for myeloma. Urethane worked well only in an occasional patient who could stand the enormous toxicity. A review of the literature prior to 1960 shows average survival times from the onset of symptoms to death ranged from 20-28 months. In most series, eight to nine months is given as the duration of symptoms prior to diagnosis, leaving about 12-20 months survival time following diagnosis.

Several changes have occurred since melphalan was introduced: Carbone *et al.*<sup>9</sup> clearly demonstrated that after 1960 the median duration from

symptoms to diagnosis was shortened to five months in patients admitted to the National Cancer Institute; several groups drew attention to the importance of prognostic factors (*Table I*) and arrived at close agreement; Durie and Salmon<sup>10</sup> proposed a staging system for multiple myeloma based on hemoglobin, serum calcium, bone lesions, and myeloma protein production rate. Whether this system will be useful has not yet been shown.

The most important change took place in the criteria of response. Hoogstraten<sup>11</sup> and Alexanian<sup>12</sup> initially used an increase in hemoglobin, decrease in elevated serum calcium, 50 per cent decrease in excretion of Bence Jones protein and of serum myeloma protein, recalcification of bone lesions, and increase in serum albumin as the important objective criteria. To this, Hoogstraten added disappearance of bone pain and improvement in performance status as subjective criteria. But now Alexanian, speaking for the Southwest Oncology Group (SWOG), uses only the following: (1) Decrease in the myeloma protein production rate to 25 per cent or less of the pretreatment level; and (2) Sustained decrease in 24-hour urine globulin to 10 per cent or less and to less than 0.2 gm/day. Serum calcium must be normal and the lytic skull lesions may not increase.

The relevancy of these new response criteria is questionable. Is it no longer important if the patient continues to have bone pain and cannot work? Are we perhaps putting too much emphasis on how many patients respond by these new criteria with too little attention to the survival? These are just simple questions in need of answers. Part of these answers can be seen in *Table II*.

The survival times in ten studies are listed; all were calculated from the beginning of therapy. Notice that from the single drug — melphalan — treatment has advanced to combinations of four drugs and most recently even six drugs. With melphalan alone, the median survival times in four studies ranged around 24 months. In the last study in *Table II*, the median ranges around 30 months. In the latest SWOG study, not yet reported, the median dropped back to 28 months.

Does this mean that patients are now living four to six months longer? It is doubtful. In *Table II* the survival time is measured from the beginning of therapy. In the first three studies more than half of the patients had already been diagnosed long before they began treatment with melphalan. These patients were in the last stages of disease. On the other hand, the protocol for the 1974-1976 patients required that they be newly diagnosed.

TABLE I  
COMMONLY USED PROGNOSTIC CRITERIA  
IN MYELOMATOSIS

Parameter	Favorable	Unfavorable
Age (years)	<55	>65
Performance*	0, 1	2, 3, 4
Hemoglobin (g/100 ml)	>10.5	<8.5
Serum Calcium (mg/100 ml)	<11.0	>12.0
BUN (mg/100 ml)	<20	>30
Serum Creatinine (mg/100 ml)	<2.0	>2.0
Serum Albumin (g/100 ml)	>3.5	<3.0
IgG (g/100 ml)	<5.0	>7.0
IgA (g/100 ml)	<3.0	>5.0
Bence Jones Protein	absent	present

\*Grade 0: Fully active, able to carry on all pre-disease performance without restriction. Grade 1: Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g., light housework, office work. Grade 2: Ambulatory and capable of all self care but unable to carry out any work activities, up and about more than 50 per cent of waking hours. Grade 3: Capable of only limited self care, confined to bed or chair more than 50 per cent of waking hours. Grade 4: Completely disabled, cannot carry on any self care, totally confined to bed or chair.

TABLE II  
MEDIAN SURVIVAL TIMES IN  
MULTIPLE MYELOMA

Period	Induction Treatment	Median Survival* (mo)	Reference
1959-1966	M	23	Alexanian et al <sup>12</sup>
1960-1962	M	23	Hoogstraten et al <sup>11</sup>
1962-1964	M	26	Hoogstraten et al <sup>13</sup>
1965-1967	M	GR 30 PR 21	Costa et al <sup>14</sup>
	M + P	GR 53 PR 9	
	M + P + T	GR 36 PR 4	
1965-1968	M + P	21	Alexanian et al <sup>15</sup>
	M + P + Pr	23	
1970-1972	BCP	28	Cohen et al <sup>16</sup>
1973-1974	MAC	22-26	Alexanian et al <sup>17</sup>
	MCP	22-26	
	MCBP	22-26	
1972-1976	MP	22	Cohen et al <sup>18</sup>
	BCP	22	
1972-1976	MP	GR 40 PR 10	Harley et al <sup>19</sup>
	BCMP	GR 30 PR 21	
1974-1976	CAP	31	Alexanian et al <sup>20</sup>
	VCAP	31	
	VMCP	30	
	VBAP	28	

\*From start of therapy

GR = good risk, PR = poor risk, M = melphalan, P = prednisone, C = cyclophosphamide, Pr = procarbazine, T = testosterone, A = adriamycin, B = BCNU, V = vincristine

No matter how an investigator alters the criteria of response, onset of the disease in a given patient cannot be changed nor can date of death be misinterpreted. Survival is the bottom line, and survival has not changed. The only changes have been costly to the patient — more expensive drugs and increased toxicity. It is indeed time to revert to melphalan alone,<sup>11, 12</sup> reserve prednisone for the anemic patient, and administer radiotherapy to those areas of pain that remain after the patient has been treated with melphalan for about three months. Other treatment should consist of hydration, physical therapy, exercise, and careful observation for lytic lesions in the extremities which can become so large that only radiotherapy can prevent fracture.

It is puzzling that multiple myeloma has done so poorly with modern chemotherapy. Unlike many other malignancies, everything seems to favor early success. Myelomatosis has had easily recognizable markers — M-protein and Bence Jones protein —

for more than 100 years. The prognostic factors have been clearly defined for a long time. Supportive measures and radiotherapy have been in use for some time and are well worked out. Staging criteria have existed for five years, and measurement of tumor mass, as well as synthetic rate of protein, have led to a better understanding of the disease process. Added to this is the fact that myeloma was among the first diseases to respond well to drug therapy.

At present, all we can do is wait to find new active drugs and treat our patients — initially at least — in a conservative manner.

### Self-Assessment Questions

1. List five favorable prognostic factors in myeloma.
2. What was the range of survival time following diagnosis for patients seen before 1960?
3. List five unfavorable prognostic factors in myeloma.
4. What are the markers for myelomatosis?
5. What is the median survival time for patients treated with melphalan alone?

(Answers on page 470)

## CHANGE OF ADDRESS

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## Drug INFORMATION

LINDA HOGAN, M.S., R.Ph., *Editor*

### *Verapamil*

**Question:** I understand that a new drug, verapamil, is on the market. Would you provide me with information regarding its pharmacologic actions and therapeutic uses?

**Answer:** Verapamil HCl is marketed by Knoll as Isoptin and by Searle as Calan. It is indicated for the treatment of supraventricular tachyarrhythmias. It is a member of a heterogeneous group of compounds classified as "calcium channel blockers." These agents represent a unique approach to the treatment of cardiovascular diseases including cardiac arrhythmias, myocardial ischemia, coronary vasospasm (Prinzmetal's angina), hypertension, and idiopathic hypertrophic subaortic stenosis.<sup>1</sup> Verapamil, a papaverine derivative, has been in clinical use in Europe since 1962.

Calcium plays an integral role in a variety of biological processes. From a cardiovascular standpoint, calcium is required to generate action potentials and to link excitation to muscular contraction.<sup>2</sup> Pacemaker cells in the sinoatrial (SA) node and the proximal atrioventricular (AV) node are dependent upon calcium influx via the "slow calcium channels" for initiation of cardiac electrical activity.<sup>3</sup> Calcium influx also yields an interaction with the inhibitory complex, troponin-tropomyosin, thus allowing the binding of myosin to the actin binding site. Such a binding initiates muscular contraction.<sup>4</sup>

Verapamil acts by altering the kinetic parameters of the slow calcium channel. More specifically, verapamil slows cell activation and the recovery from inactivation.<sup>5</sup> The net electrophysiologic effects include a decrease in the rate of SA nodal discharge and a decrease in AV nodal conductile velocity.<sup>6</sup> Verapamil also has profound hemodynamic effects. The three main actions which are man-

ifested are coronary artery dilation (increased coronary blood flow), peripheral arterial dilation (decreased systemic vascular resistance), and a negative inotropic effect (decreased myocardial oxygen consumption).<sup>7</sup>

Verapamil has enjoyed its greatest therapeutic use in the treatment of cardiac arrhythmias. Intravenous verapamil (0.075-0.15 mg/kg bolus) is most effective in terminating acute paroxysmal supraventricular tachycardia (PSVT) due to re-entry within the AV node or via an accessory pathway that bypasses the AV node.<sup>8</sup> Reversion to sinus rhythm occurs in 70-100 per cent of patients. This success rate is unmatched by conventional therapy, including digitalis or beta-adrenergic blockers. By slowing conduction in the AV node, verapamil can also slow the ventricular rate in atrial flutter and fibrillation, although termination of these arrhythmias is often incomplete.<sup>8</sup> Verapamil is relatively ineffective in the treatment of ventricular arrhythmias.

This agent is also useful in the treatment of chronic exertional angina pectoris, and in Prinzmetal's angina due to coronary artery vasospasm. Verapamil, in oral doses of 120 mg three times per day, has been shown to be as effective as propranolol (100 mg three times per day) against classic exertional angina. The criteria for efficacy was a decrease in the frequency of anginal attacks, a decrease in amount of nitroglycerin ingested, and an increase in exercise tolerance.<sup>9, 10</sup> Verapamil is also effective in treating Prinzmetal's angina. A significant decrease in the frequency of anginal attacks and in the amount of nitroglycerin used was seen with oral verapamil when compared to placebo.<sup>11</sup>

Side effects from administration of verapamil are  
(Continued on page 473)

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## *The President's Message*

In the year 1847, 250 physicians organized to form an association of physicians — The American Medical Association. Today the AMA consists of students, doctors in training, academicians, and a host of specialists, as well as those involved in primary care — members who provide the best health care in the world.

The AMA concentrates primarily on promoting the art and science of medicine and thereby improving public health. Seventy per cent of the annual budget is devoted to developing programs for health care, health information, scientific policy, nutrition, drugs, occupational safety, mental health, improved rural medical care, promoting physical fitness, and many other areas of worth.

The AMA provides the leadership in guiding this country's excellence in medical education. No other single organization assumes this major responsibility. The AMA participates with other organizations to accredit medical schools, hospitals, residency requirements, and allied health training programs. You had to meet high standards to become a physician. The AMA sees that these same high standards continue. *If the AMA did nothing more than serve as guardian of the educational standards of our profession, it would deserve our support.*

The AMA also actively protects the rights of *all* physicians, testifying more than 200 times before Congress and federal agencies during each term of



Congress. It fights against restrictive rules and regulations and against those who would have medicine become a public utility. Also, it battles for medicine in the courts. Just recently, in January 1981, as you may well know, the AMA defeated antitrust charges by the chiropractors.

Surely, an organization that provides such a broad spectrum of service of this caliber commands the supportive membership of each one of us.

Fraternally,

*Herman W. Hiesterman M.D.*

*President*





The human observer, situated within his limited sphere of vision in the latter part of the 20th Century, is apt to consider that this has been the most tumultuous of those centuries or any of the several that went before (except, possibly the first one, however it came about). It has produced a variety of events that have shaken the many worlds — social, political, religious, scientific, or whatever — that make up the whole. Any sense of pride growing out of these accomplishments must be tempered by the knowledge that each has been developed from the mergence of numerous efforts of the past and, if our sages have brought them to fruition in our time, they have presented us with almost as many problems as benefits. Almost — not quite — and the *not quite* is the difference that leads us on toward other such events.

These events might be grouped by their capacity for good or evil. The good — medical advances, improvements in living conditions, extension of education to name a few — are gratefully acknowledged and produce negative reaction only because they weren't sooner or more or cheaper — or run counter to ingrained cultural dictates. The evil — wars primarily, with their side effects including terrorism — are condemned by an impotent majority even as new ones are developing. But unfortunately for the keepers of the peace — and fortunately for their opponents — the good and evil are inextricably mixed. Thus, the most problematic legacy of this century's warfare has undoubtedly been the process of man-made nuclear fission. It epitomizes the perplexing nature of existence in a world where intellect and technologic genius (in itself a coalescence of numerous technologic commonplaces) abruptly cross time barriers to confront us with problems we find ourselves ill-prepared to meet. But however devastating the capabilities of nuclear fission, it is also capable of tremendous good and has already been so. At some point, the lives saved by its by-products will without doubt surpass those it took or

damaged in its introduction, but that point will be unrecognized because these benefits will be dispersed or obscured in other disciplines.

And before we have made more than bare acquaintance with the nuclear fission problem, the ubiquitous nucleus — biologic this time — tosses us a new one in the form of genetic engineering. The disclosure of the anatomy of DNA is as portentous to the biologic world as invading the privacy of the atom was for the physical — although it arrived with somewhat more subtlety and consequently it took a little longer for the instant experts to appear. There is, however, a similarity in the problems the two nuclei have produced. These two great exploits of human intellect and ingenuity have excited tremendous controversy, each being hailed, on one hand, for actual and projected benefits and, on the other, damned as instruments of human obliteration.

To touch, even in passing, on all the facets of the matter is impossible not only because of time and space but our own admittedly limited grasp of infinitely complex problems (which we at least recognize and admit). This comment rises from fact, not modesty, but we have a great deal of company since the number of self-appointed commentators on the implications of genetic engineering must by now equal the number of pseudophysicists who have seen holocaust in every nuclear reaction. However, both areas have another thing in common. Legitimate, qualified scientists in both efforts have been among those who have voiced doubts and objections. Although objective and critical observations, including contention and debate, are the hallmark of science, these objective and critical observations often lead to widely varying interpretations and conclusions (read opinions). So, with the appropriate combination of humility and arrogance of the superficially educated, we come up with certain interpretations — and a chance to air them.

Perhaps the most publicized and — to the public at least — disturbing concern is that some recombinant

form of DNA will escape our control and produce a race of monsters or desolate the earth otherwise. This recalls to us the solemn and sincere warning of our very respected chemistry professor in those dear, dead, pre-nuclear fission days that, should anyone succeed in splitting the atom, it would produce a chain reaction which would destroy the earth. As it happened, it did not — at least not yet or in the manner expected.

Assuming a comparable risk in the area of genetic engineering, we suggest, discounts two important factors. First, it fails to appreciate the human capacity for devising those controls that will neutralize the risk. (We look upon our sewerage system as a public health essential but initially it brought a demonstrable increase in disease — until methods of proper disposal of the sewage were devised). Second, despite the risks, it fails to consider the benefits to come from the numerous applications — immunologic and therapeutic among them, and some risk will always be a price for benefits. In addition, it gives undue credit to the survival and proliferative capabilities of mutant strains. It is not all that easy to produce a recombinant DNA or maintain it when produced (despite the reports of do-it-yourself kits). We become so preoccupied with the abnormal that we lose sight of the fact that there is little in our world to equal nature's determination to retain the normal. And again, it is becoming apparent that viruses are attaining a more threatening status against mankind or being recognized more for what they are. Since viruses are naked molecules of DNA, we must go to their level to fight them effectively.

The prospect of recombining DNA virtually at will has been cited as abhorrent because we must not disturb natural evolution by introducing changes that would take ages on the regular timetable — if they occurred at all — but is this not evolution in itself? It has been said that we must not presume to be wise enough to remake ourselves but does this not presume that we are then not wise enough to know when to accept or refuse the products of our minds? Are we not constantly remaking ourselves (including the genetic mistakes) when we intervene to cure illness? Is the certainty of safety of all end results to be the prerequisite to our search for and acceptance of our new directions?

The warnings and predictions of doom seem to leap over countless restraints and preconditions to accept as accomplished fact what are now only suggestions of direction or challenge. The theoretical considerations are skewed toward possible risks which actual knowledge, in its limited state, cannot refute except with faith in its purpose. But, moreov-

er, is there not in every objection the blueprint of its overcoming? Is there not in every advocacy the seed of its own revision?

So the controversy is an integral and necessary part of the effort, essential to reaching a justifiable decision. The denial of qualified opposition weakens the result. In unquestioning acceptance, the stimulus of challenge and the benefits of other outlooks is lost. It was in this light, then, that the scientific community accepted restraints on the development of recombinant DNA voluntarily — or as nearly voluntarily as one could expect considering the subject and the participants. While the initial restraints — the "Guidelines" — have been relaxed, the process itself and the awareness of professional as well as lay scrutiny recognize the need for responsible control.

There are two considerations that may have played a role in the revision of the "Guidelines" but certainly have been at work in bringing genetic engineering to its current level of activity. The first extends through history as the vital substance, the connecting thread, the irresistible force: the human mind. Through an endless line of laws, guidelines, resolutions, protocols, restrictions, and prohibitions, mankind has never declared a moratorium on thought, and this obsession with cerebral exercise, though reduced at times and misdirected not infrequently, has never failed to maintain an upward pressure. In the current context, the enormity of war may have forced a dramatic exposition of intellectual effort to make nuclear fission a reality far sooner than peaceful interests would have done. The challenge of an adversary, although peaceful at the moment, inspired the extra concentration of financial and intellectual vigor to reach the moon. And a coalition of disciplines, techniques, promise of benefits — and human curiosity — combined to make the controlled alteration of DNA an undeniable fact to be confronted. There are numerous examples through the ages but this continuity, durability, and versatility of the human intellect has demonstrated without interruption that it is the one compelling force we possess — or possesses us.

The other element accounting for the onward thrust of genetic engineering is more mundane but as pervasive in its influence on the human scene as the mind — money. It has already been demonstrated that the beneficial products of recombinant DNA can be utilized toward highly lucrative ends. The financial world has been quick to see a good thing, and the force of monetary return must be accorded its share of the credit for inspiring our current efforts in this direction at least as potently as any altruistic, intel-



lectualized goals. This is already demonstrated by the fact that the animal breeders and farmers are well ahead of us in practical genetics but then they have better behaved subjects.

So the process continues, the controversies fluctuating in intensity but the pattern repeating as each new unbelievable development emerges. As we approach the limits of mankind's creative capabilities, we'll find much the same cast — someone curious enough to open a new door (which someone before has pointed to), the protestors, the challengers, the rewards, both spiritual and material, both promised and realized — and the dangers. — *D.E.G.*

## Mollities et Fragilitas Ossium

(Continued from page 465)

### Answers

1. Any of the ten listed in *Table I*, but the five most important are: Absence of Bence Jones protein; normal serum calcium; BUN below 20 mg/100 ml; hemoglobin > 10.5 g/100 ml; and IgG below 5.0 g/100 ml.
2. Twelve to twenty months.
3. See *Table I*. The more unfavorable factors are those that are also listed as being favorable, but with different levels.
4. M-protein and Bence Jones protein.
5. Around 24 months.

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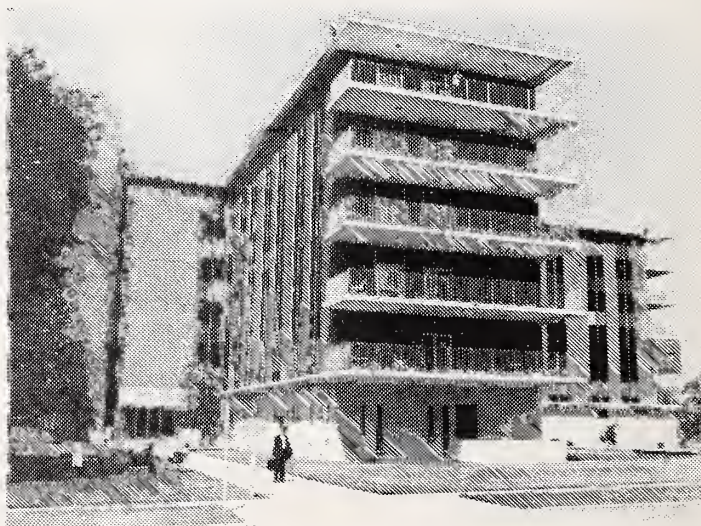
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## References

1. Dalrymple, J.: On the microscopic character of mollities ossium. *Dublin J. Med. Sci.*, 1846.
2. Bence Jones, H.: Papers on chemical pathology, prefaced by the Gulstonian lectures, read at the Royal College of Physicians, 1846; Proceedings of the Royal Society of London. *Lancet* 2:88, 1847.
3. Bence Jones, H.: On a new substance occurring in the urine of a patient with "mollities ossium." *Philos. Trans. R. Soc. Lond.* p. 55, 1848.
4. MacIntyre, W.: Case of mollities and fragilitas ossium accompanied with urine strongly charged with animal matter. *Med. Chir. Soc. Trans.* 33:211, 1850.
5. Stokvis, B. J.: Albuminuria of Bence Jones (in Dutch). *Werken van het Genootschap ter bevordering der Natuur-Genes-en Heelkunde te Amsterdam* 11:9, 1872.
6. Kuhne, W.: Hemialbumose in the urine (in German). *Z. Biol.* 19:209, 1883.
7. Kahler, O.: On the symptomatology of multiple myeloma: Observations of albumosuria (in German). *Prager med. Wschr.* 14:33, 45, 1889.
8. Rustizky, J. von: Multiple myeloma (in German). *Z. f. Chir.* 3:102, 1873.
9. Carbone, P. P.; Kellerhouse, L. E. and Gehan, E.: Plasmacytic myeloma: A study of the relationship of survival to various clinical manifestations and anomalous protein type in 112 patients. *Am. J. Med.* 42:937-948, 1967.
10. Durie, B. G. M. and Salmon, S. E.: A clinical staging system for multiple myeloma. *Cancer* 36:842-854, 1975.
11. Hoogstraten, B. *et al.*: Melphalan in multiple myeloma. *Blood* 30:74-83, 1967.
12. Alexanian, R. *et al.*: Melphalan therapy for plasma cell myeloma. *Blood* 31:1-10, 1968.
13. Hoogstraten, B. *et al.*: Intermittent melphalan therapy in multiple myeloma. *JAMA* 209:251-253, 1969.
14. Costa, G. *et al.*: Melphalan and prednisone: An effective combination for the treatment of multiple myeloma. *Am. J. Med.* 54:589-599, 1973.
15. Alexanian, R. *et al.*: Combination chemotherapy for multiple myeloma. *Cancer* 30:382-389, 1972.
16. Cohen, H. J. *et al.*: Combination chemotherapy with intermittent 1-3-bis(2-chloroethyl)-1-nitrosourea (BCNU), cyclophosphamide and prednisone for multiple myeloma. *Blood* 54:824-836, 1979.
17. Alexanian, R. *et al.*: Combination therapy for multiple myeloma. *Cancer* 40:2765-2771, 1977.
18. Cohen, H. J.; Abramson, N.; Bartolucci, A. and Bailar, J.: BCNU, cyclophosphamide and prednisone (BCP) vs melphalan and prednisone (MP) in myeloma. *Proc. Am. Soc. Clin. Oncol.* 17:280, 1976.
19. Harley, J. B. *et al.*: Improved survival of increased-risk myeloma patients on combined triple-alkylating agent therapy: A study of the CALGB. *Blood* 54:12-22, 1979.
20. Alexanian, R. *et al.*: Chemo-immunotherapy for multiple myeloma; A Southwest Oncology Group study. *Cancer*, in press.

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*Summary*: all manuscripts should include a short abstract which is a factual (not descriptive) summary of the work.

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*Drugs* should be called by their generic names; the trade names can be added in parentheses if they are considered important. All *units of measure* must be given in the metric system.

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Bibliographic references should not exceed 20 in number, documenting key publications. Personal communications and unpublished data should not be included. References should be arranged according to the order of citation, and not alphabetically. All references must be numbered consecutively and all must be cited in the text. Use the style of the AMA publications, giving: name of author, title of article, name of periodical, volume, pages, year.

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All material which cannot be set in type, such as photographs, line drawings, graphs, charts, tracings (for preparation of tables, see below) must be mounted on white cardboard. All must be identified on the back as to figure number, author's name, and an arrow indicating top. Legends should be typed double spaced on a separate sheet of paper, limited to a maximum of 30 words.

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## Emergency Consent

(Continued from page 462)

had just beaten the child. The parent would possibly not want to agree to the child's treatment. In all of these instances, minors are not getting consent from those responsible for them. Yet through the previously mentioned cases, paths have been cleared for emergency treatment for minors directly or for adults who are either pregnant or have young children.

To obtain emergency consent for the minor, the medical and legal officials must work hand-in-hand. If the hospital and its personnel maintain good rapport with the courts, one can expect the child to receive emergency treatment through new laws and court decrees. If the courts are sensitive to these

critical situations and realize that the health care centers are seeking remedy through genuine means, the pursuit of a youngster's health may proceed unabated. In the emergency room, one may be reasonably certain that a minor, a patient who is not *sui juris*, may be given emergency treatment because, "The basic principle is that the preservation of human life takes rank and precedence over anything else."<sup>53</sup> The proper use of medical skill and legal means can work in co-existence to attempt to preserve the minor's own existence.

## Acknowledgement

Robert P. Hudson, M.D., and Wendy K. Winer, R.N., assisted in the preparation of this paper.

References are available from the author.

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This is another in a series of reports on major issues facing the medical profession. The purpose is to inform physicians and medical students on what the AMA is doing, on behalf of the profession and the public, to influence decisions that will affect health care in the next decade and beyond.

As a physician or medical student, you automatically have a strong vested interest in medical ethics. Ethics are a traditional frame of reference for society's attitude toward physicians. Today in America, there is more reference to that frame than ever before.

That's because so many of today's health-care issues are ethical challenges. As outstanding examples, consider the moral right and wrong involved in:

- Seemingly excessive or needless costs of medical services—at a time when cost is the chief health-care issue and the chief basis for government intervention in care.
- Medicine's enhanced ability and obligation to prolong the lives of the terminally ill—versus pressures for mercy killing and for limits on the expenditure of health-care resources.
- Rules and procedures that could make medical records more accessible to outsiders. The moral conflict here is between the principles of confidentiality and the stake of third parties (notably government) in medical oversight and review.
- The question as to where various biomedical advances, such as genetic engineering and test-tube fertilization will lead us?

Those and similar questions involve the very character of



medical practice, including your own. Ethically wrong answers could distort that character.

Physicians have to do their best to provide answers that are both high-minded and sure-footed. Acting in concert, we have to come forth with sound ethical principles and applications.

The AMA has stood for traditional moral values from its very beginnings but has been flexible enough to keep adapting to new needs. In order to adapt, the AMA (by vote of its House of Delegates) revised its Principles of Medical Ethics last July—the fifth time it has done so.

Here are some of the ways in which the AMA has been applying medical ethics to relevant current issues . . . on your behalf:

- Stimulation of ways to cut down on needless or excessive health services and costs. This includes peer and utilization review, physician participation in PSROs, cost-benefit analysis, and alternatives to hospitalization whenever feasible.
- Model state legislation for disciplining the wayward or incompetent physician, who can be an economic as well as a medical problem. Twenty-three states now have laws that wholly or partially resemble the AMA model.
- New ethical standards on such topics as genetic engineering, test-tube fertilization, and euthanasia . . . as set forth in the latest edition of the AMA Judicial Council Opinions and Reports.
- Tireless legislative and legal efforts to protect the confidentiality of patient records.
- To maximize our effectiveness, we need YOUR MEMBERSHIP. The larger our membership (230,000 now), the bigger our influence. We need influence in coordinating the ethical commitment of American medicine . . . and in clarifying that commitment to government, to society, and throughout our profession.

We need YOU . . . if we're to give you all the help that you need.

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### Verapamil

*(Continued from page 466)*

generally infrequent (10% incidence) and warrant the discontinuation of drug in only 1 per cent of all cases.<sup>12</sup> Effects that are manifested following oral administration include gastric distress and constipation, vertigo, headache, nervousness, and facial flushing.<sup>7, 13</sup> Intravenous administration of verapamil may produce hypotension and AV conduction disturbances.<sup>14</sup> Contraindications to the use of verapamil include the presence of "sick sinus syndrome," second or third degree AV block, digitalis toxicity, hypotension, and severe left ventricular dysfunction.<sup>13, 15</sup> Intravenous beta-adrenergic blocking drugs should not be administered within a few hours of verapamil.

Verapamil will almost certainly become the intravenous drug of choice for treating acute PSVT. The oral agent, which will probably be marketed in the near future, will be quite useful in the treatment

of Prinzmetal's angina.

*Submitted by Steven B. Cano, R.Ph.,  
Pharmacy Resident*

**References available from the Drug Information Service,  
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## Holistic Medicine

(Continued from page 450)

ple — those who have manifest disease; (2) what could be called “well care services,” including people who are worried but well, people who are sick but asymptomatic, and people who are well, but want to be “weller.” A range of such services could include educational courses in self-care and self-help, workshops addressed to specific areas such as substance abuse, nutrition, physical fitness, stress management, and family planning; and (3) a high risk group, who because of their behavioral attitudes (such as obesity, drinking, smoking) or some exposure to toxic substances in the working environment, would be monitored on a regular basis by such an organization. Incentives would be used, and existing facilities such as Employees Assistance programs would have to be involved in such a network. If a particular business or corporation used an incentive system such as time off to attend a stress management workshop and actively fostered the use of employee assistance programs for other than dealing with the already sick employee, such an idea would have a chance of working. A small private corporation near Topeka funded the training of its employees in stress management using Transcendental Meditation and provides meditation time during the working day. Economic incentives could include also the reward of non-usage of sick leave, with additional salary bonus, and one can even envisage the possibility of health care stamps somewhat like green stamps. With the cooperation of the appropriate public agencies, tax benefits could also be arranged. Public recognition could be given to those who achieved a high level of health such as that provided by the model of competitive sports.

In conclusion, we would like to highlight the fact that a proposal for community based health facilitation networks, laudable as they might be in theory, must be solidly grounded on attitudinal change toward health and disease in the socially identified health expert — the physician. In one sense this brief outline is a challenge to the modern physician to once more take a leading role in this difficult and essential task, before administrators and social systems theorists do so by default.

## References

1. Wildavsky, A.: Doing better and feeling worse: The political pathology of health policy. *Daedalus* 106:105-123, 1977.
2. *Newsletter of the American Holistic Medical Association*, June 1980.
3. Brenan, G.: *Thoughts in a Dry Season*. Cambridge, Cambridge University Press, 1978.
4. Ng, L. K. Y.; Davis, D. L. and Manderscheid, R. W.: The health promotion organization: A practical intervention designed to promote healthy living. *Public Health Rep.* 93:446-455, 1978.
5. Comfort, A.: On healing Americans. *J. Oper. Psychiatry* 9:26-36, 1978.
6. Appelbaum, S. A.: *Out in Inner Space* Garden City NY, Anchor Press/Doubleday, pp. 312-316, 1979.
7. Cousins, N.: Anatomy of an illness (as perceived by the patient). *N. Engl. J. Med.* 295:1458-1463, 1976.
8. Simonton, C.; Simonton, S. and Creighton, J.: *Getting Well Soon*. Los Angeles, Tarcher, 1978.
9. Twemlow, S. W. et al.: Ego integrating function of Psi states. *J. Psychiatr. Treat. Eval.*, in press.
10. Bonstedt, T.; Smith, T. T. and McSweeney, J. J.: HMO psychiatry, an uncharted territory. *J. Oper. Psychiatry* 9:48-54, 1978.
11. LaLonde, M.: *A New Perspective on the Health of Canadians: A Working Document*. Ottawa, Ministry of Health and Welfare, 1974.

## Evaluation and Management

(Continued from page 453)

5. Hurd, M. M.; Farrell, K. H. and Waylonis, G. W.: Shoulder sling for hemiplegia: Friend or foe? *Arch. Phys. Med. Rehabil.* 55:519-522, 1974.
6. Taketomi, Y.: Observations on subluxation of the shoulder joint in hemiplegia. *Phys. Ther.* 55:39-40, 1975.
7. Editorial: Shoulder-hand syndrome. *Lancet* 1:850, 1974.
8. Kleinert, H. E. et al.: Post traumatic sympathetic dystrophy. *Orthop. Clin. North Am.* 4:917-926, 1973.
9. Davis, S. W.; Petrillo, C. R.; Eichberg, R. and Chu, D. S.: Shoulder-hand syndrome in a hemiplegic population: A five year retrospective study. *Arch. Phys. Med. Rehabil.* 58:353-356, 1977.
10. Steinbrocker, O.: Shoulder-hand syndrome (chapter 80). *Arthritis and Allied Conditions* (Hollander, J. and McCarty, D., eds.). Philadelphia, Lea & Febiger, 1974.
11. Editorial: Reflex sympathetic dystrophy syndrome. *Lancet* 1:1226, 1976.
12. Moskowitz, E. and Porter, J. I.: Peripheral nerve lesions in the upper extremity in hemiplegic patients. *N. Engl. J. Med.* 269:776-778, 1963.
13. Najenson, T.; Yacubovich, E. and Pikielni, S. S.: Rotator cuff injury in shoulder joints of hemiplegic patients. *Scand. J. Rehabil. Med.* 3:131-137, 1971.
14. Jensen, E. M.: The hemiplegic shoulder. *Scand. J. Rehabil. Med.* (Supp) 7:113-119, 1980.
15. Moskowitz, E. and Steinman, R. I.: Heterotopic calcification in the hemiplegic upper extremity. *NY State J. Med.* 64:432-435, 1964.

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### **Council Meeting**

*(Continued from page 425)*

sional liability insurance program in Kansas. A detailed report will be presented in January.

*Medical Students* — Lewis Wall, Medical Student at UKSM, reported on the AMA Medical Student Business Session meeting last January. Delegates representing some 22,000 medical students who are AMA members and 70 medical schools were in attendance. Issues included admissions policies, financial aid, legislation, and the importance of organized medicine. It appears that direct student membership in the state medical society would be preferable to joining through the county medical societies.

The Council took the following actions:

*Annual Meeting* — After hearing reports of improved attendance experienced by other organizations when meeting out of state, as well as considering the concerns for possible adverse publicity, the 1985 meeting was scheduled for Colorado Springs. The western component medical societies will be invited to consider hosting the meeting.

*1982 Budget* — Approved incorporating the Building and Investment Fund into the General

Fund; approved salary increases for staff; instructed staff to prepare a formula for salary increases for the president, possibly tying it to the Consumer Price Index; tabled the special assessment for the IPP loan program until further information can be studied; approved the 1982 budget as presented.

*Ninnescah Medical Society* — Approved a change in the name of the former Pratt-Kingman Medical Society, with the addition of physicians from the former Stafford County and Edwards County Medical Societies, to Ninnescah Medical Society.

*Edwards County Medical Society* — Revoked the charter due to a lack of the required minimum number of members. Members have been meeting with Pratt-Kingman, now Ninnescah Medical Society.

*Crime Stoppers, Inc.* — Approved a contribution of \$500 to a group in Topeka, headed by Allen Rush, attempting to develop a fund that will lead to awards for information on conviction of criminals in burglaries. Staff was directed to engrave office equipment with appropriate identification numbers and to place a sign on the doors directed to potential thieves.

*KaMPAC* — Charles M. Striebinger, M.D., Shawnee Mission, was appointed to KaMPAC Board to represent Congressional District # 3.

The meeting adjourned at noon.



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Before prescribing, see complete prescribing information in SK&F Co. literature or PDR. The following is a brief summary.

#### WARNING

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

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**Warnings:** Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K<sup>+</sup> levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K<sup>+</sup> intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and

triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

**Precautions:** Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids). Periodic BUN and serum creatinine determinations should be made, especially in the elderly diabetics or those with suspected or confirmed renal insufficiency. Watch for signs of impending coma in severe liver disease. If spironolactone is used concomitantly, determine serum K<sup>+</sup> frequently; both can cause K<sup>+</sup> retention and elevated serum K<sup>+</sup>. Two deaths have been reported with such concomitant therapy (in one, recommended dosage was exceeded; in the other, serum electrolytes were not properly monitored). Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis and aplastic anemia have been reported with thiazides. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. Dyazide® interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with Dyazide®, but should it develop, corrective measures should be taken such as potassium supplementation or increased

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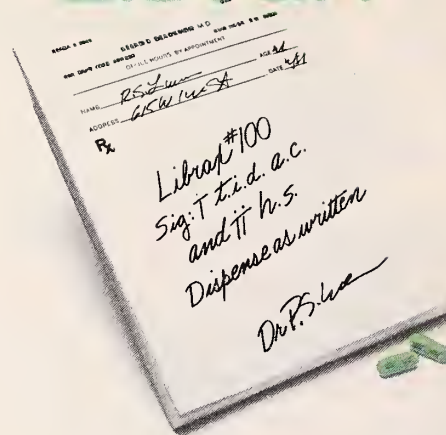


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**Contraindications:** Glaucoma; prostatic hypertrophy, benign bladder neck obstruction; hypersensitivity to chlordiazepoxide HCl and/or clidinium bromide.

**Warnings:** Caution patients about possible combined effects with alcohol and other CNS depressants, and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Physical and psychological dependence rarely reported on recommended doses, but use caution in administering Librium® (chlordiazepoxide HCl/Roche) to known addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions) reported following discontinuation of the drug.

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As with all anticholinergics, inhibition of lactation may occur.

**Precautions:** In elderly and debilitated, limit dosage to smallest effective amount to preclude ataxia, oversedation, confusion (no more than 2 capsules/day initially; increase gradually as needed and tolerated). Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider pharmacology of agents, particularly potentiating drugs such as MAO inhibitors, phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions reported in psychiatric patients. Employ usual precautions in treating anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship not established.

**Adverse Reactions:** No side effects or manifestations not seen with either compound alone reported with Librax. When chlordiazepoxide HCl is used alone, drowsiness, ataxia, confusion may occur, especially in elderly and debilitated, avoidable in most cases by proper dosage adjustment, but also occasionally observed at lower dosage ranges. Syncope reported in a few instances. Also encountered: isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent, generally controlled with dosage reduction; changes in EEG patterns may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice, hepatic dysfunction reported occasionally with chlordiazepoxide HCl, making periodic blood counts and liver function tests advisable during protracted therapy. Adverse effects reported with Librax typical of anticholinergic agents, i.e., dryness of mouth, blurring of vision, urinary hesitancy, constipation. Constipation has occurred most often when Librax therapy is combined with other spasmolytics and/or low residue diets.



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## A visible difference in myoelectric rhythms of the colon

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**References:** 1. Sullivan MA, Cohen S, Snape WJ: *N Engl J Med* 298:878-883, Apr 20, 1978.  
2. Snape WJ et al: *Gastroenterology* 72: 383-387, Mar 1977.

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Each capsule contains 5 mg chlordiazepoxide HCl and 2.5 mg clidinium Br.

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\*Librax has been evaluated as possibly effective for this indication. Please see summary of prescribing information on facing page.

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getting there...



...takes dietary restriction, regular exercise, behavior modification, and sometimes the addition of an effective anorectic.

prescribe

# Tenuate\* Dospan\*<sup>®</sup> <sup>IV</sup> (diethylpropion hydrochloride USP)

75 mg controlled-release tablets

the #1 prescribed anorectic

## An effective short-term adjunct in an indicated weight loss program

Overweight patients in certain diagnostic categories often require strict obesity control. Diethylpropion hydrochloride has been reported useful in obese patients with certain complications. While it is not suggested that Tenuate in any way reduces these complications in the overweight, it may have a useful place as a short-term adjunct in a prescribed dietary regimen. Tenuate should not be administered to patients with severe hypertension; see additional Precautions and Adverse Reactions on this page.

## In uncomplicated obesity

Many patients, on the other hand, present with excess fat but no disease. While this condition is often termed uncomplicated obesity, complications of both a social and a psychologic nature may be distressingly real for the patients. In these cases, a short-term regimen of Tenuate can help reinforce your dietary counsel during the important early weeks of an indicated weight loss program.

## Clinical effectiveness

The anorectic effectiveness of diethylpropion hydrochloride is well documented. No less than 18 separate double-blind, placebo-controlled studies attest to its usefulness in daily practice.<sup>1</sup> And the unique chemistry of Tenuate provides "...anorectic potency with minimal overt central nervous system or cardiovascular stimulation."<sup>2</sup> Compared with the amphetamines, diethylpropion has minimal potential for abuse.

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References: 1. Citations available on request from Merrell Dow Pharmaceuticals Inc., Cincinnati, Ohio 45215. 2. Hoekenga, M. T. et al: A comprehensive review of diethylpropion hydrochloride. In Central Mechanisms of Anorectic Drugs, S. Garattini and R. Samanin, Ed., New York. Raven Press, 1978, pp. 391-404.

Tenuate<sup>®</sup> <sup>IV</sup>  
(diethylpropion hydrochloride USP)

Tenuate Dospan<sup>®</sup> <sup>IV</sup>  
(diethylpropion hydrochloride USP)  
controlled-release

AVAILABLE ONLY ON PRESCRIPTION

### Brief Summary

**INDICATION:** Tenuate and Tenuate Dospan are indicated in the management of exogenous obesity as a short-term adjunct (a few weeks) in a regimen of weight reduction based on caloric restriction. The limited usefulness of agents of this class should be measured against possible risk factors inherent in their use such as those described below.

**CONTRAINDICATIONS:** Advanced arteriosclerosis, hyperthyroidism, known hypersensitivity, or idiosyncrasy to the sympathomimetic amines, glaucoma. Agitated states. Patients with a history of drug abuse. During or within 14 days following the administration of monoamine oxidase inhibitors, (hypertensive crises may result).

**WARNINGS:** If tolerance develops, the recommended dose should not be exceeded in an attempt to increase the effect; rather, the drug should be discontinued. Tenuate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle; the patient should therefore be cautioned accordingly. When central nervous system active agents are used, consideration must always be given to the possibility of adverse interactions with alcohol. **Drug Dependence:** Tenuate has some chemical and pharmacologic similarities to the amphetamines and other related stimulant drugs that have been extensively abused. There have been reports of subjects becoming psychologically dependent on diethylpropion. The possibility of abuse should be kept in mind when evaluating the desirability of including a drug as part of a weight reduction program. Abuse of amphetamines and related drugs may be associated with varying degrees of psychologic dependence and social dysfunction which, in the case of certain drugs, may be severe. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG. Manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxications is psychosis, often clinically indistinguishable from schizophrenia. **Use in Pregnancy:** Although rat and human reproductive studies have not indicated adverse effects, the use of Tenuate by women who are pregnant or may become pregnant requires that the potential benefits be weighed against the potential risks. **Use in Children:** Tenuate is not recommended for use in children under 12 years of age.

**PRECAUTIONS:** Caution is to be exercised in prescribing Tenuate for patients with hypertension or with symptomatic cardiovascular disease, including arrhythmias. Tenuate should not be administered to patients with severe hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of Tenuate and the concomitant dietary regimen. Tenuate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdose. Reports suggest that Tenuate may increase convulsions in some epileptics. Therefore, epileptics receiving Tenuate should be carefully monitored. Titration of dose or discontinuance of Tenuate may be necessary.

**ADVERSE REACTIONS:** **Cardiovascular:** Palpitation, tachycardia, elevation of blood pressure, precordial pain, arrhythmia. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride. **Central Nervous System:** Overstimulation, nervousness, restlessness, dizziness, jitteriness, insomnia, anxiety, euphoria, depression, dysphoria, tremor, dyskinesia, mydriasis, drowsiness, malaise, headache; rarely psychotic episodes at recommended doses. In a few epileptics an increase in convulsive episodes has been reported. **Gastrointestinal:** Dryness of the mouth, unpleasant taste, nausea, vomiting, abdominal discomfort, diarrhea, constipation, other gastrointestinal disturbances. **Allergic:** Urticaria, rash, ecchymosis, erythema. **Endocrine:** Impotence, changes in libido, gynecomatia, menstrual upset. **Hematopoietic System:** Bone marrow depression, agranulocytosis, leukopenia. **Miscellaneous:** A variety of miscellaneous adverse reactions has been reported by physicians. These include complaints such as dyspnea, hair loss, muscle pain, dysuria, increased sweating, and polyuria.

**DOSAGE AND ADMINISTRATION:** Tenuate (diethylpropion hydrochloride): One 25 mg. tablet three times daily, one hour before meals, and in mid-evening if desired to overcome night hunger. Tenuate Dospan (diethylpropion hydrochloride) controlled-release: One 75 mg. tablet daily, swallowed whole, in mid-morning. Tenuate is not recommended for use in children under 12 years of age.

**OVERDOSSAGE:** Manifestations of acute overdose include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states. Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Overdose of pharmacologically similar compounds has resulted in fatal poisoning, usually terminating in convulsions and coma. Management of acute Tenuate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Intravenous phentolamine (Regitine<sup>®</sup>) has been suggested on pharmacologic grounds for possible acute, severe hypertension, if this complicates Tenuate overdose.

Product Information as of June, 1980

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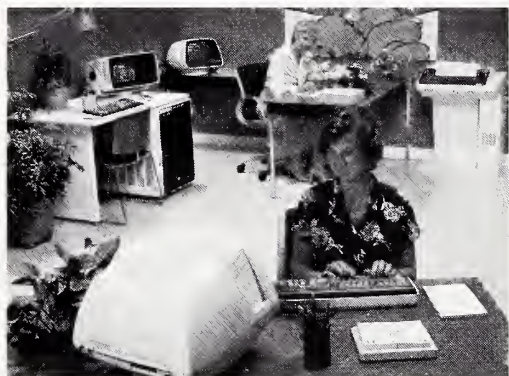
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## Brief Summary of Prescribing Information.

**Indications and Usage:** Management of anxiety disorders or short-term relief of symptoms, anxiety or anxiety associated with depressive symptoms. Anxiety or tension associated with stress of everyday life usually does not require treatment with an anxiolytic.

Effectiveness in long-term use, i.e., more than 4 months, has not been assessed by systematic clinical studies. Reassess periodically usefulness of the drug for the individual patient.

**Contraindications:** Known sensitivity to benzodiazepines or acute narrow-angle glaucoma.

**Warnings:** Not recommended in primary depressive disorders or psychoses. As with all CNS acting drugs, warn patients not to operate machinery or motor vehicles, and of diminished tolerance for alcohol and other CNS depressants.

**Physical and Psychological Dependence:** Withdrawal symptoms like those noted with barbiturates and alcohol have occurred following abrupt discontinuance of benzodiazepine (including convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Addictive individuals, e.g. drug addicts and alcoholics, should be under careful surveillance when on benzodiazepines because of their predisposition to habituation and dependence. Withdrawal symptoms have also been reported following abrupt discontinuance of benzodiazepines taken continuously at therapeutic levels for several months.

**Precautions:** In depression accompanying anxiety, consider possibility for suicide.

For elderly or debilitated patients, initial daily dosage should not exceed 2mg to avoid oversedation. Terminate dosage gradually since abrupt withdrawal of any anxiolytic agent may result in symptoms like those being treated: anxiety, agitation, irritability, tension, insomnia, occasional convulsions. Observe usual precautions with impaired renal or hepatic function. Where gastrointestinal or cardiovascular disorders coexist with anxiety, note that lorazepam has not been shown of significant benefit in treating gastrointestinal or cardiovascular component. Esophageal dilation occurred in rats treated with lorazepam for more than 1 year at a dose of 6mg/kg/day. No effect dose was 1.25mg/kg/day (about 6 times maximum human therapeutic dose of 10mg/day). Effect was reversible only when treatment was withdrawn within 2 months of first observation. Clinical significance is unknown, but use of lorazepam for prolonged periods and in geriatrics requires caution and frequent monitoring for symptoms of upper disease. Safety and effectiveness in children under 12 years have not been established.

**ESSENTIAL LABORATORY TESTS.** Some patients have developed leukopenia, some have elevations of LDH. As with other benzodiazepines, periodic blood counts and liver function tests are recommended during long-term therapy.

**CLINICALLY SIGNIFICANT DRUG INTERACTIONS.** Benzodiazepines produce CNS depressive effects when administered with such medications as barbiturates or alcohol.

**CARCINOGENESIS AND MUTAGENESIS.** No evidence of carcinogenic potential emerged in rats during an 18-month study. No studies regarding mutagenesis have been performed.

**PREGNANCY:** Reproductive studies were performed in mice, rats, and 2 strains of rabbits. Occasional anomalies (reduction of tarsals, tibia, metatarsals, malrotated limbs, gastroschisis, malformed skull and microphthalmia) were seen in drug-treated rabbits without relationship to dosage. Although all these anomalies were not present in the concurrent control group, they have been reported to occur randomly in historical controls. At 40mg/kg and higher, there was evidence of fetal resorption and increased fetal loss in rabbits which was not seen at lower doses. Clinical significance of these findings is not known. However, increased risk of congenital malformations associated with use of minor tranquilizers (chloralhydrate, diazepam, meprobamate) during first trimester of pregnancy has been suggested in several studies. Because use of these drugs is rarely a matter of urgency, use of lorazepam during this period should almost always be avoided. Possibility that a woman of child-bearing potential may become pregnant at institution of therapy should be considered. Advise patients if they become pregnant to communicate with their physician about desirability of discontinuing the drug. In humans, blood levels from umbilical cord blood indicate placental transfer of lorazepam and glucuronide.

**NURSING MOTHERS:** It is not known if oral lorazepam is excreted in human milk like other benzodiazepines. As a general rule, nursing should not be undertaken while on a drug as many drugs are excreted in milk.

**Adverse Reactions,** if they occur, are usually observed at beginning of therapy and generally disappear on continued medication or on decreasing dose. In a sample of about 3,500 anxious patients, most frequent adverse reaction is sedation (15.9%), followed by dizziness (6.4%), weakness (4.2%) and unsteadiness (3.4%). Less frequent are disorientation, depression, change in appetite, headache, sleep disturbance, agitation, dermatological symptoms, function disturbance, various gastrointestinal symptoms and autonomic manifestations. Incidence of sedation and unsteadiness increased with age. Small decreases in blood pressure have been noted but are not clinically significant, probably being related to relief of anxiety.

**Overdosage:** In management of overdosage with any drug, bear in mind multiple agents may have been taken. Manifestations of overdosage include somnolence, confusion and coma. Induce vomiting and/or undertake gastric lavage followed by general supportive care, monitoring vital signs and close observation. Hypotension, though unlikely, usually may be controlled with Levarterenol Bitartrate Injection U.S.P. Usefulness of dialysis has not been determined.

## Ativan<sup>®</sup> (lorazepam) for Anxiety

**Dosage:** Individualize for maximum beneficial effects. Increase dosage gradually when needed, giving higher evening dose before increasing daytime doses. Anxiety, usually 2-3mg/day given b.i.d. or t.i.d.; dosage may vary from 1 to 10mg/day in divided doses. For elderly or debilitated patients, initially 1-2mg/day; insomnia due to anxiety or transient situational stress, 2-4mg h.s.

**How Supplied:** 0.5, 1.0 and 2.0mg tablets.



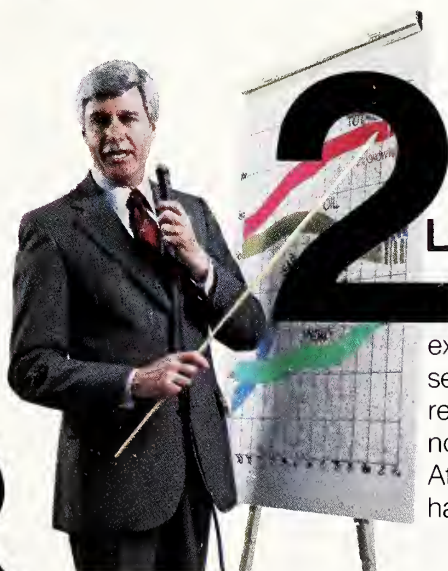
# Four practical reasons to prescribe **Ativan<sup>®</sup>** for (lorazepam) **Anxiety<sup>\*</sup>**



# 1

## No interaction with more than 300 drugs<sup>†</sup>

In clinical studies, Ativan was given concomitantly with hundreds of medications, including gastrointestinal and cardiovascular, with no reported interactions. Whereas the interaction of diazepam and cimetidine has been shown to cause increased sedation in patients taking both drugs, the clearance of Ativan is not delayed by Tagamet<sup>‡</sup>



# 2

## Lets most patients stay active

Long-acting benzodiazepines have long-acting metabolites with activity which can produce excessive accumulation that may lead to unwanted sedation. Ativan<sup>®</sup> has no active metabolites, reaches steady state in 2 to 3 days and usually does not cause oversedation. Also, the shorter half-life of Ativan is consistent with b.i.d. dosage, so drug hangover is seldom a problem the next morning.



# 3

## Not appreciably affected by aging

Unlike the long-acting benzodiazepines—diazepam<sup>®</sup>, chlordiazepoxide<sup>®</sup>, clorazepate<sup>®</sup> and prazepam<sup>®</sup>—the metabolism and clearance of Ativan are not appreciably affected by the aging process.



# 4

## Not significantly affected by liver dysfunction

Ativan<sup>®</sup> is metabolized in one simple step to an inactive glucuronide; its absorption and excretion are not significantly altered by cirrhosis or hepatitis. By contrast, the metabolism of diazepam and chlordiazepoxide has been reported to be significantly altered in patients with liver dysfunction.

<sup>\*</sup>Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic.  
<sup>†</sup>All benzodiazepines, however, produce additive effects when given with CNS depressants, such as barbiturates or alcohol.

<sup>‡</sup>Tagamet (cimetidine) is a registered trademark of Smith Kline & French Laboratories, Division of SmithKline Corporation.

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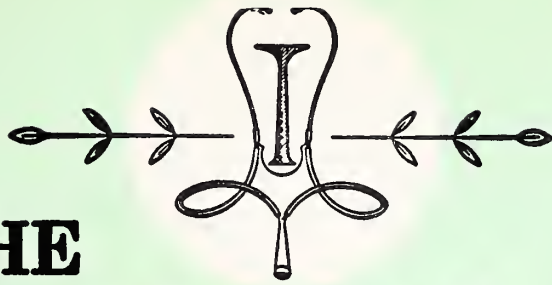
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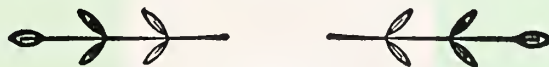
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NOVEMBER  
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(ISSN 0022-8699)

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NO. XI



# The JOURNAL of the KANSAS MEDICAL SOCIETY

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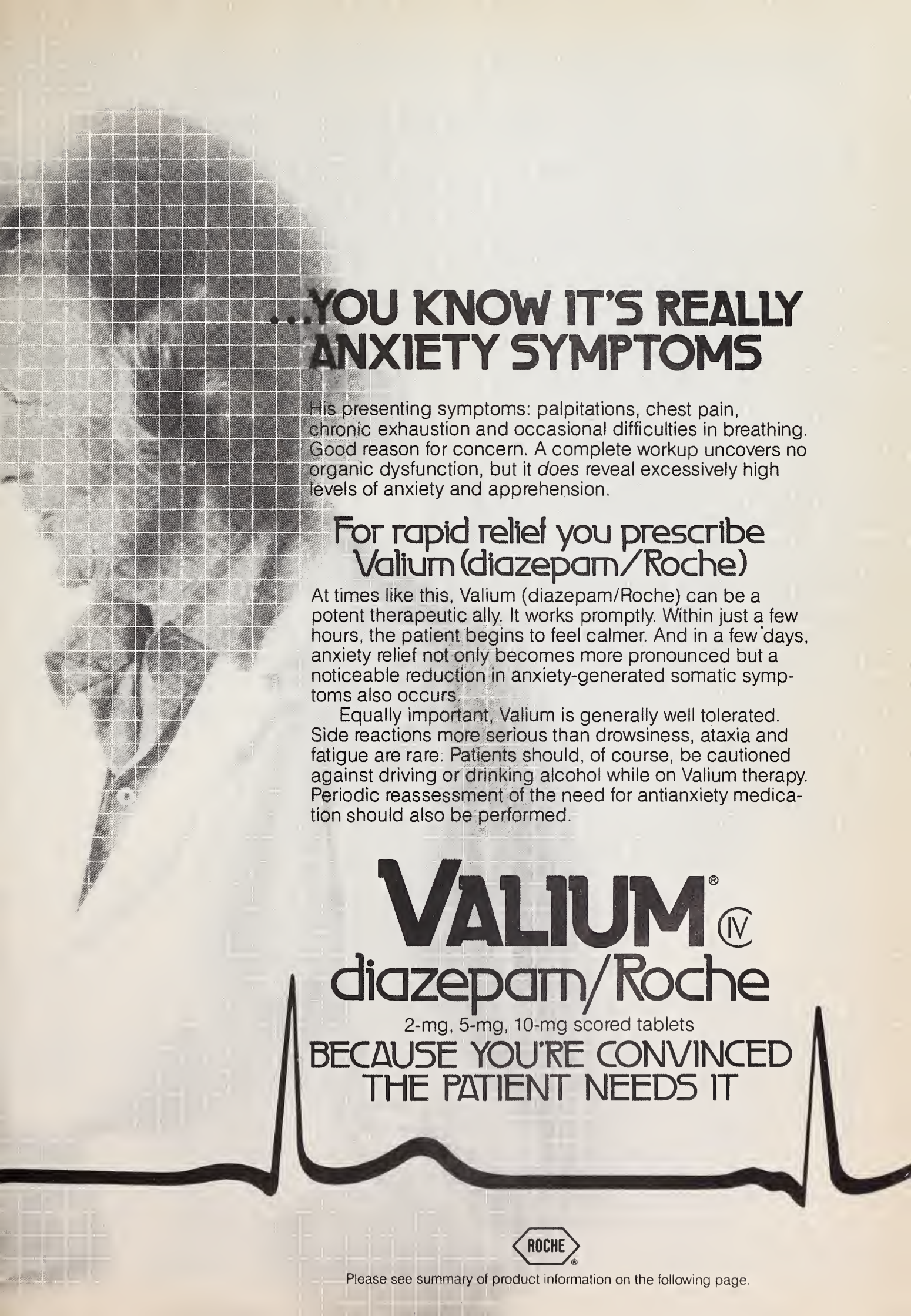
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## diazepam/Roche

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Before prescribing, please consult complete product information, a summary of which follows:

**Indications:** Management of anxiety disorders, or short-term relief of symptoms of anxiety. Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic. Symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome; convulsive disorders (not for sole therapy).

The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation. The clearance of Valium and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

**Dosage:** Individualize for maximum beneficial effect. **Adults:** Anxiety disorders, symptoms of anxiety, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. **Geriatric or debilitated patients:** 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) **Children:** 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

**How Supplied:** For oral administration, Valium scored tablets—2 mg, white; 5 mg, yellow; 10 mg, blue—bottles of 100\* and 500; \* Prescription Paks of 50, available in trays of 10; \* Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25; † and in boxes containing 10 strips of 10; ‡

\*Supplied by Roche Products Inc., Manati, Puerto Rico 00701

†Supplied by Roche Laboratories, Division of Hoffmann-La Roche Inc., Nutley, New Jersey 07110



ROCHE PRODUCTS INC.  
Manati, Puerto Rico 00701

## Information for Authors

### Manuscript Preparation

Manuscripts must be typewritten, double spaced leaving wide margins. Submit the original, plus one copy if possible.

**Titles** should be short, specific, and amenable to indexing. A subtitle if frequently used to keep the main title short.

**Summary:** all manuscripts should include a short abstract which is a factual (not descriptive) summary of the work.

**Author Responsibility:** the author is responsible for all statements made in his work, including changes made by the copy editor. Manuscripts are received with the explicit understanding that they are not simultaneously under consideration by any other publication. Publication elsewhere will be subsequently authorized at the discretion of the Editor.

**Galley Proof:** To make extensive changes in the article after the text has been set in type may require an additional cost which exceeds the original. The galley proof is for correction of ERRORS, and a rewriting of the article should be done on the original copy BEFORE it is submitted for publication.

**Drugs** should be called by their generic names; the trade names can be added in parentheses if they are considered important. All units of measure must be given in the metric system.

### References

Bibliographic references should not exceed 20 in number, documenting key publications. Personal communications and unpublished data should not be included. References should be arranged according to the order of citation, and not alphabetically. All references must be numbered consecutively and all must be cited in the text. Use the style of the AMA publications, giving: name of author, title of article, name of periodical, volume, pages, year.

### Illustrations

All material which cannot be set in type, such as photographs, line drawings, graphs, charts, tracings (for preparation of tables, see below) must be mounted on white cardboard. All must be identified on the back as to figure number, author's name, and an arrow indicating top. Legends should be typed double spaced on a separate sheet of paper, limited to a maximum of 30 words.

**Drawings and Graphs** should be done professionally in India ink on illustration board or high grade white drawing paper.

**Photographic** material should be submitted in duplicate as high contrast, glossy prints. Color illustrations will be accepted for publication only if the author assumes the cost.

THE JOURNAL will assume the cost of B/W engravings and cuts up to \$35 (or 5 cuts). Engraving cost for illustrations in excess of \$35 will be billed to the author.

### Tables

Because tables are set by hand, their cost is comparable to illustrations. A reasonable number of tables are allowed without cost to the author.

Tables should be self-explanatory and should supplement, not duplicate, the text. Since the purpose of a table is to compare or classify related items, the data must be logically and clearly organized. The relationship and comparison are established by the correct choice of column heads (captions of vertical columns) and stubs (left entries in horizontal listings).

Each table should be typed double spaced, including all headings, on separate sheets of lettersize paper. Oversize paper should not be used. Instead, repeat heads and stubs on a second sheet for tables requiring extra width. Number tables consecutively. Each table must have a title.

### Reprints

A reprint order form with a table covering cost will be sent with the galley proof to each contributor. Since the JOURNAL has no way to provide for reprints, they must be ordered by the author and purchased directly from the printer.



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# QUESTION MEDICATION ORDERS

To survive hospitalization these days, a patient would be wise to demand an explanation of *what* s/he is getting and *why* before accepting any medication. That's the conclusion of a round-up of recent research on hospital medication errors published in the November issue of *RN Magazine*. Even in hospitals with the most modern pharmacy set-ups, studies have found three errors for every 100 medications given out. In hospitals with older systems, error rates as high as one out of six have been found.

Medical mistakes can cause permanent illness and even death. They are commonly caused by such booby traps as: drugs names that sound alike ("ananase" mistaken for "orinase") and look alike ("demerol" given instead of "dicumarol"), and drug packages that are easily confused with one another.

Sloppy physician handwriting (in one study, one out of six orders were totally illegible) and carelessness with decimal points (resulting in ten-fold overdoses) are other sources of error. Sometimes a nurse hands pills to the wrong patient, gives an injection when a pill was intended, or forgets to give medication altogether.

The best protection? If the patient insists on knowing what medicines have been ordered and when to expect them, s/he can help the physician, nurse, and pharmacist catch their all-too-human errors before they have a chance to do any harm.

For further information, or copies of the *RN* article, contact Lee Vinroot at (201) 262-3030.

*RN Magazine*, a national journal for the professional nurse, is published monthly by Medical Economics Company Inc.

## Brief Summary of Prescribing Information.

**Indications and Usage:** Management of anxiety disorders or short-term relief of symptoms anxiety or anxiety associated with depressive symptoms. Anxiety or tension associated with stress of everyday life usually does not require treatment with an anxiolytic.

Effectiveness in long-term use, i.e., more than 4 months, has not been assessed by systematic clinical studies. Reassess periodically usefulness of the drug for the individual patient.

**Contraindications:** Known sensitivity to benzodiazepines or acute narrow-angle glaucoma.

**Warnings:** Not recommended in primary depressive disorders or psychoses. As with all CNS acting drugs, warn patients not to operate machinery or motor vehicles, and of diminished tolerance for alcohol and other CNS depressants.

**Physical and Psychological Dependence:** Withdrawal symptoms like those noted with barbiturates and alcohol have occurred following abrupt discontinuance of benzodiazepines (including convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Addictive-prone individuals, e.g. drug addicts and alcoholics, should be under careful surveillance when on benzodiazepines because of their predisposition to habituation and dependence. Withdrawal symptoms have also been reported following abrupt discontinuance of benzodiazepines taken continuously at therapeutic levels for several months.

**Precautions:** In depression accompanying anxiety, consider possibility for suicide.

For elderly or debilitated patients, initial daily dosage should not exceed 2mg to avoid oversedation. Terminate dosage gradually since abrupt withdrawal of any antianxiety agent may result in symptoms like those being treated: anxiety, agitation, irritability, tension, insomnia and occasional convulsions. Observe usual precautions with impaired renal or hepatic function. Where gastrointestinal or cardiovascular disorders coexist with anxiety, note that lorazepam has not been shown of significant benefit in treating gastrointestinal or cardiovascular component. Esophageal dilation occurred in rats treated with lorazepam for more than 1 year at 6mg/kg/day. No effect dose was 1.25mg/kg/day (about 6 times maximum human therapeutic dose of 10mg/day). Effect was reversible only when treatment was withdrawn within 2 months of first observation. Clinical significance is unknown; but use of lorazepam for prolonged periods and in geriatrics requires caution and frequent monitoring for symptoms of upper disease. Safety and effectiveness in children under 12 years have not been established.

**ESSENTIAL LABORATORY TESTS:** Some patients have developed leukopenia; some have had elevations of LDH. As with other benzodiazepines, periodic blood counts and liver function tests are recommended during long-term therapy.

**CLINICALLY SIGNIFICANT DRUG INTERACTIONS:** Benzodiazepines produce CNS depressant effects when administered with such medications as barbiturates or alcohol.

**CARCINOGENESIS AND MUTAGENESIS:** No evidence of carcinogenic potential emerged in rats during an 18-month study. No studies regarding mutagenesis have been performed.

**PREGNANCY:** Reproductive studies were performed in mice, rats, and 2 strains of rabbits. Occasional anomalies (reduction of tarsals, tibia, metatarsals, malrotated limbs, gastroschisis, malformed skull and microphthalmia) were seen in drug-treated rabbits without relationship to dosage. Although all these anomalies were not present in the concurrent control group, they have been reported to occur randomly in historical controls. At 40mg/kg and higher, there was evidence of fetal resorption and increased fetal loss in rabbits which was not seen at lower doses. Clinical significance of these findings is not known. However, increased risk of congenital malformations associated with use of minor tranquilizers (chlordiazepoxide, diazepam, meprobamate) during first trimester of pregnancy has been suggested in several studies. Because use of these drugs is rarely a matter of urgency, use of lorazepam during this period should almost always be avoided. Possibility that a woman of child-bearing potential may become pregnant at institution of therapy should be considered. Advise patients if they become pregnant to communicate with their physician about desirability of discontinuing the drug. Humans, blood levels from umbilical cord blood indicate placental transfer of lorazepam and glucuronide.

**NURSING MOTHERS:** It is not known if oral lorazepam is excreted in human milk like other benzodiazepines. As a general rule, nursing should not be undertaken while on a drug since many drugs are excreted in milk.

**Adverse Reactions,** if they occur, are usually observed at beginning of therapy and generally disappear on continued medication or on decreasing dose. In a sample of about 3,500 anxious patients, most frequent adverse reaction is sedation (15.9%), followed by dizziness (6.3%), weakness (4.2%) and unsteadiness (3.4%). Less frequent are disorientation, depression, seasickness, change in appetite, headache, sleep disturbance, agitation, dermatological symptoms, function disturbance, various gastrointestinal symptoms and autonomic manifestations. Incidence of sedation and unsteadiness increased with age. Small decreases in blood pressure have been noted but are not clinically significant, probably being related to relief of anxiety.

**Overdosage:** In management of overdosage with any drug, bear in mind multiple agents may have been taken. Manifestations of overdosage include somnolence, confusion and coma. Induce vomiting and/or undertake gastric lavage followed by general supportive care, monitoring vital signs and close observation. Hypotension, though unlikely, usually may be controlled with Levarterenol Bitartrate Injection U.S.P. Usefulness of dialysis has not been determined.

**Ativan<sup>®</sup>**  
for (lorazepam)  
**Anxiety**

**Dosage:** Individualize for maximum beneficial effects. Increase dose gradually when needed, giving higher evening dose before increasing daytime doses. Anxiety, usually 2-3mg/day given b.i.d. or t.i.d.; dosage may vary from 1 to 10mg/day in divided doses. For elderly or debilitated, initially 1-2mg/day; insomnia due to anxiety or transient situational stress, 2-4mg h.s.

**How Supplied:** 0.5, 1.0 and 2.0mg tablets.



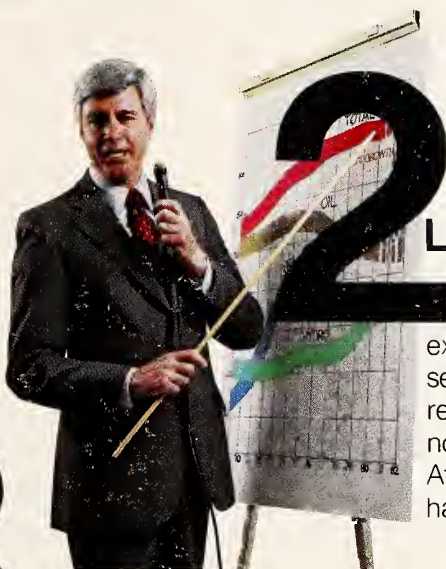
# Four practical reasons to prescribe **Ativan<sup>®</sup>** **for** (lorazepam) **Anxiety<sup>\*</sup>**



# 1

## No interaction with more than 300 drugs<sup>†</sup>

In clinical studies, Ativan was given concomitantly with hundreds of medications, including gastrointestinal and cardiovascular, with no reported interactions. Whereas the interaction of diazepam and cimetidine has been shown to cause increased sedation in patients taking both drugs, the clearance of Ativan is not delayed by Tagamet.<sup>‡</sup>



# 2

## Lets most patients stay active

Long-acting benzodiazepines have long-acting metabolites with activity which can produce excessive accumulation that may lead to unwanted sedation. Ativan<sup>®</sup> has no active metabolites, reaches steady state in 2 to 3 days and usually does not cause oversedation. Also, the shorter half-life of Ativan is consistent with b.i.d. dosage, so drug hangover is seldom a problem the next morning.



# 3

## Not appreciably affected by aging

Unlike the long-acting benzodiazepines—diazepam <sup>®</sup>, chlordiazepoxide <sup>®</sup>, clorazepate <sup>®</sup> and prazepam <sup>®</sup> — the metabolism and clearance of Ativan are not appreciably affected by the aging process.



# 4

## Not significantly affected by liver dysfunction

Ativan<sup>®</sup> is metabolized in one simple step to an inactive glucuronide; its absorption and excretion are not significantly altered by cirrhosis or hepatitis. By contrast, the metabolism of diazepam and chlordiazepoxide has been reported to be significantly altered in patients with liver dysfunction.

<sup>\*</sup>Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic.  
All benzodiazepines, however, produce additive effects when given with CNS depressants, such as barbiturates or alcohol.

Tagamet (cimetidine) is a registered trademark of Smith Kline & French Laboratories, Division of SmithKline Corporation.

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**CAUTION: *Kindness Can Be Dangerous to the Alcoholic*, by Abraham J. Twerski, M.D. Prentice-Hall, Inc., New York, 1981. 174 pages. \$9.95 hardback; \$4.95 paperback.**

The author of this volume is both a Rabbi and a psychiatrist, and is head of Gateway Rehabilitation Center.

The central theme of his book is stated in the following two sentences: "In virtually all instances, there is nothing that you can do to change the alcoholic. All that you can do is to stop the kind of behavior that prevents the alcoholic from feeling the impact of destructive drinking soon enough to save himself or herself and, it is hoped, preserve the family unit." He subsequently elaborates on this, pointing out again that one is responsible only for one's own behavior — not someone else's. He notes the importance of effecting a confrontation with the alcoholic — although we may fear it at times — to bring about a crisis by which he is forced into ending his destructive behavior.

This volume is easily read, understandable, and interestingly written. The author makes statements about different aspects of alcoholism and characteristics of the alcoholic, relationship of alcoholic to family, and the family's method of coping with the alcoholic. Each is followed by a brief history of an involved patient thereby giving an example of the statement just made. Thus it is not just didactic material, but has added to it the interesting clinical history.

The author defines alcoholism and discusses its effects. He describes how difficult it is to deal with denial — one of the grave aspects of the disease. He then deals with the folly of pretending that everything is alright and covering up for the alcoholic, and finally trying to conceal it by dishonesty and fabrication. Family and interested persons try to be kind by covering up for the alcoholic's bad behavior, but in essence they only delay the time of great crisis or "the bottom." "The folly of our kindness" is likened to a parent's neglect of diphtheria inocula-

tions for a child. Continuation of this type of kindness is a "lethal benevolence," for in delaying the recognition of alcoholism, treatment is also delayed. Alcoholism is one disease that — in contrast to many others — the person must accept as a disease, must accept the fact that he or she is an alcoholic, before treatment will be successful. To repeat — it is the one disease where acceptance of the diagnosis is the treatment of the disease.

The author gives a good description and various examples of ways to bring about confrontation by the alcoholic, noting things to avoid — such as accusation, determination of blame, and the importance of using "I" instead of "you." He states that to effect confrontation may result in a 50 per cent mortality rate, but to avoid it results in a 100 per cent mortality rate because the disease will progress to the eventual outcome of death, suicide, or insanity.

This is a well written, easily understandable volume for anyone who is involved with treating or living with an alcoholic. It should be another volume in the armamentarium of alcohol/drug counsellors and directors of drug/alcohol programs. It is a book worth the reading time. — *E.M.H.*

The Drug Information Service is maintained by the Department of Pharmacy at UKSM-KC to promote rational drug therapy. The Service is staffed by clinically oriented pharmacists with access to accurate, current, and unbiased information. Information is available free of charge to any health care practitioner involved with patient care. Contact:

Drug Information Service  
UKSM-KC, Dept. of Pharmacy  
3930 Cambridge  
Kansas City, KS 66103

Telephone (any time): 913-588-2328





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# For Sneezing and Nasal Congestion



## RU-TUSS<sup>®</sup> TABLETS

Each prolonged action tablet contains:

Phenylephrine Hydrochloride . . . . .	25 mg
Phenylpropanolamine Hydrochloride . . . . .	50 mg
Chlorpheniramine Maleate . . . . .	8 mg
Hyoscyamine Sulfate . . . . .	0.19 mg
Atropine Sulfate . . . . .	0.04 mg
Scopolamine Hydrobromide . . . . .	0.01 mg

Ru-Tuss Tablets act continuously for 10 to 12 hours.

- Vasoconstrictor, antihistaminic actions
- Rapid and prolonged relief of nasal and sinus congestion
- Convenient b.i.d. dosage



Boots Pharmaceuticals, Inc.  
Pioneers in Medicine

# For Coughing With Nasal and Bronchial Congestion



## **RU-TUSS<sup>®</sup>** EXPECTORANT

Each fluid ounce of Ru-Tuss Expectorant contains:

Codeine Phosphate	65.8 mg
(WARNING: MAY BE HABIT FORMING)	
Phenylephrine Hydrochloride	30 mg
Phenylpropanolamine Hydrochloride	20 mg
Pheniramine Maleate	20 mg
Pyrilamine Maleate	20 mg
Ammonium Chloride	200 mg
Alcohol	5%

- Vasoconstrictor, antihistaminic, expectorant actions with codeine
- Rapid relief of upper respiratory congestion and cough
- Good tasting

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the Family



# SNEEZE

## RU-TUSS<sup>®</sup> TABLETS

### DESCRIPTION

Each prolonged action tablet contains:

Phenylephrine Hydrochloride	25 mg
Phenylpropanolamine Hydrochloride	50 mg
Chlorpheniramine Maleate	8 mg
Hyoscyamine Sulfate	0.19 mg
Atropine Sulfate	0.04 mg
Scopolamine Hydrobromide	0.01 mg

Ru-Tuss Tablets act continuously for 10 to 12 hours.

Ru-Tuss Tablets are an oral antihistaminic, nasal decongestant and anti-secretory preparation.

**INDICATIONS AND USAGE** Ru-Tuss Tablets provide relief of the symptoms resulting from irritation of sinus, nasal and upper respiratory tract tissues. Phenylephrine and phenylpropanolamine combine to exert a vasoconstrictive and decongestive action while chlorpheniramine maleate decreases the symptoms of watering eyes, post nasal drip and sneezing which may be associated with an allergic-like response. The belladonna alkaloids, hyoscyamine, atropine and scopolamine further augment the anti-secretory activity of Ru-Tuss Tablets.

**CONTRAINDICATIONS** Hypersensitivity to antihistamines or sympathomimetics. Ru-Tuss Tablets are contraindicated in children under 12 years of age and in patients with glaucoma, bronchial asthma and women who are pregnant. Concomitant use of MAO inhibitors is contraindicated.

**WARNINGS** Ru-Tuss Tablets may cause drowsiness. Patients should be warned of the possible additive effects caused by taking antihistamines with alcohol, hypnotics, sedatives or tranquilizers.

**PRECAUTIONS** Ru-Tuss Tablets contain belladonna alkaloids, and must be administered with care to those patients with glaucoma, or urinary bladder neck obstruction. Caution should be exercised when Ru-Tuss Tablets are given to patients with hypertension, cardiac or peripheral vascular disease or hyperthyroidism. Patients should avoid driving a motor vehicle or operating dangerous machinery (See Warnings).

**OVERDOSAGE** Since the action of sustained release products may continue for as long as 12 hours, treatment of overdoses directed at reversing the effects of the drug and supporting the patient should be maintained for at least that length of time. Saline cathartics are useful for hastening evacuation of unreleased medication. In children and infants, antihistamine overdosage may produce convulsions and death.

**ADVERSE REACTIONS** Hypersensitivity reactions such as rash, urticaria, leukopenia, agranulocytosis, and thrombocytopenia may occur. Other adverse reactions to Ru-Tuss Tablets may be drowsiness, lassitude, giddiness, dryness of the mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, tachycardia, hypotension/hypertension, faintness, dizziness, tinnitus, headache, incoordination, visual disturbances, mydriasis, xerostomia, blurred vision, anorexia, nausea, vomiting, diarrhea, constipation, epigastric distress, hyperirritability, nervousness, dizziness and insomnia. Large overdoses may cause tachypnea, delirium, fever, stupor, coma and respiratory failure.

**DOSAGE AND ADMINISTRATION** Adults and children over 12 years of age, one tablet morning and evening. Not recommended for children under 12 years of age. Tablets are to be swallowed whole.

### HOW SUPPLIED:

Bottles of 100 Tablets  
Bottles of 500 Tablets  
Federal law prohibits dispensing without prescription.

NDC 0524-0058-01  
NDC 0524-0058-05

# COUGH

## RU-TUSS<sup>®</sup> EXPECTORANT

### DESCRIPTION

Each fluid ounce of Ru-Tuss Expectorant contains:

Codeine Phosphate	65.8 mg
<b>(WARNING: MAY BE HABIT FORMING)</b>	
Phenylephrine Hydrochloride	30 mg
Phenylpropanolamine Hydrochloride	20 mg
Pheniramine Maleate	20 mg
Pyrimamine Maleate	20 mg
Ammonium Chloride	200 mg
Alcohol	5%

Ru-Tuss Expectorant is an oral antitussive, antihistaminic, nasal decongestant and expectorant preparation.

**INDICATIONS AND USAGE** Ru-Tuss Expectorant is indicated for symptomatic relief of upper respiratory congestion associated with pharyngitis, tracheitis, bronchitis, allergic rhinitis. Also, for the temporary relief of symptoms associated with hay fever allergies, nasal congestion and cough due to the common cold.

**CONTRAINDICATIONS** Hypersensitivity to antihistamines. Concomitant use of an antihypertensive or antidepressant drug containing a monoamine oxidase inhibitor is contraindicated.

Ru-Tuss Expectorant is contraindicated in patients with glaucoma, bronchial asthma and in women who are pregnant.

**WARNINGS** Ru-Tuss Expectorant contains codeine phosphate, therefore, the patient should be warned of the potential that this drug may be habit forming. Ru-Tuss Expectorant may cause drowsiness. Patients should be warned of the possible additive effects caused by taking antihistamines with alcohol, hypnotics, sedatives and tranquilizers.

**PRECAUTIONS** Patients taking Ru-Tuss Expectorant should avoid driving a motor vehicle or operating dangerous machinery (See Warnings). Caution should be taken with patients having hypertension, diabetes, hyperthyroidism and cardiovascular disease. Caution should also be used in patients with pulmonary, hepatic or renal insufficiency.

**ADVERSE REACTIONS** Ru-Tuss Expectorant may cause drowsiness, lassitude, giddiness, dryness of mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, tachycardia, hypotension/hypertension, faintness, dizziness, tinnitus, headache, incoordination, visual disturbance, mydriasis, xerostomia, blurred vision, anorexia, nausea, vomiting, diarrhea, constipation, epigastric distress, hyperirritability, nervousness and insomnia. Overdoses may cause restlessness, excitation, delirium, tremors, euphoria, metabolic acidosis, stupor, tachycardia and even convulsions.

**DOSAGE AND ADMINISTRATION** Adults: 1 or 2 teaspoonfuls, orally, every 4 hours, not to exceed 10 teaspoonfuls in any 24-hour period.

Children 6 to 12 years of age: ½ the adult dose, not to exceed 6 teaspoonfuls in any 24-hour period. Children 2 to 6 years of age: ½ teaspoonful every 4 hours, not to exceed 3 teaspoonfuls in any 24-hour period. Children under 2 years of age: Use as directed by a physician.

### HOW SUPPLIED

Pint bottles (16 fl. oz.)  
Federal law prohibits dispensing without prescription.

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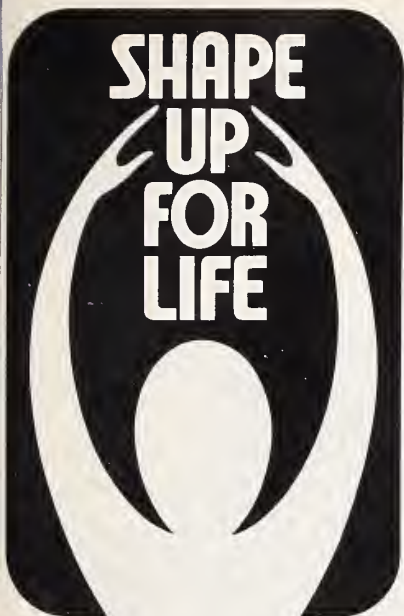
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# A U X I L I A R Y N E W S

## *An Open Letter to Kansas Physicians*

*Ed. Note:* Mrs. Betty Moore, Auxiliary President, has relinquished her space in this month's *Journal* so that Dr. Reals may explain the utilization of AMAERF funds at the local level.

With the general decrease in federal funding for medical education, private contributions to our medical schools are more important than at any other time in recent history. The Auxiliary of the American Medical Association and constituent societies throughout the United States, including Kansas, have assumed as a major project the raising of funds for medical schools. The money is donated by AMA members at the urging of the Auxiliary and is usually paid at the same time Medical Society dues are forwarded. In addition, the Auxiliary conducts various money raising projects for this purpose. The amount of money thus collected is a significant factor in the financing of our medical schools.

During the AMA meetings last July in Chicago, those of us at the House of Delegates sessions were privileged to witness the presentation by the President of the AMA Auxiliary of a check for \$2,132,000 to AMAERF. This amount includes funds for the medical student loan program; \$1,282,599 was identified for direct contributions to support medical education and the medical schools.

Kansas' share in 1980 was \$23,128: \$19,832.48 was designated for the University of Kansas School of Medicine-Kansas City, and the University of Kansas School of Medicine-Wichita share was \$3,298.50. The money is very much appreciated by the Deans of your medical school in Kansas since it assists in efforts to educate young men and women to better serve the health needs of the people of our state.

The money received in Wichita has been used in a variety of ways. This year, the money was spent to assist in furnishing a student lounge in the Medical School building. In the past our students had no room for their own use, and had been using a part of the office of the Coordinator of Student Services, Mrs. Hazel Fenske. The Sedgwick County Medical Society Auxiliary assisted us, and by using AMAERF funds, we were able to provide furniture for the room which is now in use and very much appreciated by the student body on this campus. Incidentally, the students asked that the room be named in honor of Mrs. Hazel Fenske. The contribution of AMAERF is acknowledged by a plaque in the room so that future students will know the source of the support for their center.

Other projects in the Medical School have been supported from time to time by the funds, including student activities, lectureships, teaching films, and student travel to the AMA Student Business Section meetings. From April 1980 to October 1981, we here at UKSM-W received a total of \$4,760.15 from AMAERF.

I join Dean Marvin Dunn in asking that the members of the Kansas Medical Society be generous in their support of AMAERF. This source of funding from the profession is private enterprise at its best, and illustrates the outstanding support that the University of Kansas Schools of Medicine enjoys not only from the members of our state medical society, but also from members of our Auxiliary. We appreciate your continuing support. Please — respond to the appeal for funds!

*William J. Reals, M.D., Dean  
UKSM-Wichita*



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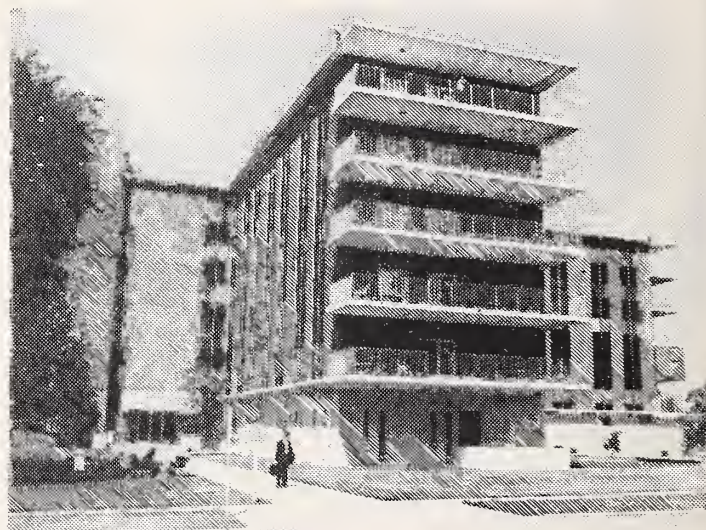
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# Patrick Henry's Second Choice

BENEDICT J. DUFFY, JR., M.D., *Hingham, Massachusetts*

My class of 1944 went through the University of Rochester Medical School in three rather than the usual four years because of the war. This was a very real problem; there just wasn't much time to think. While listening to the graduation speech on "The Coming Crisis in Medicine," most of us were thinking about several other crises. We were a rather serious group but, on the whole, not particularly unusual. What happened to some of us later was indeed unusual, and it is remembered here in the hope that something can be done to limit its recurrence. Five of the class committed suicide. We are not even sure that this is the total number since seven of the 63 class members could not be contacted. The number of suicides — almost ten per cent of the recorded class — equaled the total deaths due to heart disease, cancer, and stroke combined. Physician suicide is far from rare. It is the leading cause of death of physicians under age 40 years. The literature on mental illness, drug abuse, alcoholism, and suicide in physicians is so extensive that it is hard to believe we scarcely discussed these real threats, while we talked endlessly about the possibility of our getting coronary heart disease or cancer.

Sir William Osler, so much admired by Dean Whipple and the others from Hopkins who comprised Rochester's first medical faculty, wrote considerably about the life of the physician as student and practitioner. He counseled self-discipline, daily reading of the Bible, and cultivation of the art of not taking one's self too seriously. The perhaps-unfortunate assumption was that one had some sense of self to begin with.

But to get back to our graduation speaker, Dr. George Corner. He was talking about how changes in society were going to change the practice of medicine. It was a very good speech but hardly designed for one's personal survival kit.

Dr. Ned Cassem, an unusual psychiatrist with a vivid sense of humor, gave more of a survival speech at a recent Harvard medical graduation. He suggested that the young physicians try to enjoy medicine, not try to be God, and respect their limitations.

If they were going to hang on the wall that lofty credo: "To cure sometimes/To relieve often/To comfort always," they should write *Cassem's Perverse Laws for Physician Sanity* on the back: "Run away sometimes/Hate often/Complain constantly."

Calling suicidal ideation "Patrick Henry's second choice," he had them laughing . . . a very good sound.

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## Practice in Living

At the request of the Impaired Physicians Committee of the Kansas Medical Society, space has been made available in the *Journal* for a section featuring articles relating to concerns and problems unique to the lifestyle of the physician. Articles may focus on communication, stress and distress, responsibilities to self, medical marriage, recreation and leisure, and related topics. Manuscripts or suggested topics and questions are solicited and should be submitted to:

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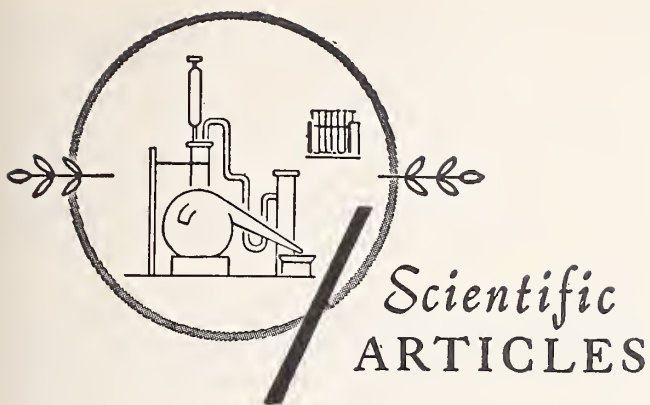
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# Substance Abuse

## *How Physicians Recover*

DAVID L. TRUDEAU, M.D., *Wichita*

METHODS of substance abuse treatment and their application to the physician impaired by substance abuse will be described in this article. This statement seems to beg the question, "Are physician substance abusers different?" Physicians are licensed to practice medicine by state statutes, and most states have impaired physician statutes; thus there is an obvious medical/legal issue regarding intervention and treatment of impaired physicians.<sup>1</sup> In addition to facing potential legal risks, substance abusing physicians may also be resistant to treatment because of the almost divine status that historically has accrued to them.<sup>2</sup> David Smith, M.D., also sees the drug-addicted physician as difficult to treat because of high levels of physical dependence, and minimization and denial of the severity of the problem.<sup>3</sup>

The physician as a substance abuse treatment patient, then, is seen as a challenge. He is the healer who cannot heal himself, the legally threatened and officially licensed prescriber, the expert in pharmacology and physiology. Nevertheless, the physician has a good prognosis for recovery if treated.<sup>3-6</sup> Recovery rates for physicians in treatment are apparently higher than those of the general population. Bissell's study would indicate that the incidence of polydrug abuse among physicians is similar to that of the general population. Fifty-six per cent of abusing physicians studied were alcohol abusers only.<sup>5</sup>

Although physicians may differ in some ways and are perhaps somewhat more difficult to treat, they generally have a better prognosis for recovery in treatment. This review of treatment and recovery

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**Physicians are more reluctant to enter treatment programs than other substance abusers, but once they have made the commitment, the prognosis is good. One of the most positive dynamics of treatment involves utilization of support groups by both the physician and his/her family members.**

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will focus on generalities, and view the physician as considerably more like the non-physician substance abuser than different.

### **Treatment Concepts**

Bob Smith, M.D., an Akron, Ohio proctologist, was a founding member of Alcoholics Anonymous, and he has achieved great status as a recovering alcoholic. Dr. Bob also abused barbiturates.<sup>7</sup> Dr. Bob's poignant story in "Alcoholics Anonymous" is described in greater detail in his biography, "Dr. Bob and the Good Old Timers."<sup>8</sup> Dr. Robert Smith fought a losing battle against alcoholism and drug addiction until May of 1935 when fortuitously he met Bill Wilson, a recovering alcoholic from New York. He learned from Wilson what Bill had learned from his physician, William Silkworth, M.D. Dr.

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Address reprint requests to Dr. Trudeau, Alcohol Treatment Unit, St. Joseph Medical Center, 3600 E. Harry, Wichita, KS 67218.



Silkworth described compulsive alcohol use and the chronic obsession with alcohol to Bill Wilson in such a way that it became a cornerstone for his recovery. Silkworth saw alcoholism as a type of "allergy" and the alcoholic as a person who could never use alcohol safely in any form. Silkworth, a psychiatrist and neurologist, realized his inadequacies in making any impression on an alcoholic's problems.<sup>9</sup> Bill conveyed this message to Bob as he visited with him during a one-month period. Together they found that by sharing their strength and hope with one another, and by openly and honestly acknowledging their mutual vulnerability to alcohol, they established an element of enduring recovery.<sup>11</sup>

Acceptance of alcoholism as a hopeless physical and mental condition, and the discovery of strength in fellowship, was accompanied by a third potent concept for recovery. This was attributed to Carl Jung, and had been handed to Bill Wilson by another of his recovering friends. This was the concept that a spiritual awakening was necessary for recovery from alcoholism. At first this appeared to be a religious ideal, but the concept was soon accepted by early AA members as manifestation of spirituality in its broadest context.<sup>12</sup>

Alcoholics Anonymous (AA) has grown to membership of approximately one million people and is widely recognized as effective; it is an important component of most treatment center programs. Shortly before her death, Marty Mann — founder of the National Council on Alcoholism — said that Dr. Robert Smith should be recognized as having made the most substantial contribution to health and welfare of any physician of the century.

Harry M. Tiebout, an analytically oriented psychiatrist, had an opportunity to study the early recovering alcoholics, some of whom were his patients. While they were drinking, they became active in Alcoholics Anonymous, achieved sobriety, and underwent some remarkable transformations. Tiebout never took credit for his patients' recovery, recognizing only that he was able to facilitate it. He published a number of papers.<sup>13-18</sup> Tiebout described the process of denial to alcoholism; the process of compliance — going through the motions but not really achieving any change in behavior or attitudes; and of surrender. Surrender seemed to be the key, and here previously noted ego factors of intense self-centeredness, grandiosity, and infantilism disappeared. This was followed by a process of acceptance of one's vulnerability and need for help. Tiebout's observations became an important basis for modern therapy for the addicted. Vernon Johnson's

book, "I'll Quit Tomorrow,"<sup>19</sup> now in a revised edition, explains addiction intervention in treatment in easily understandable terms with the basic dynamic described by Tiebout. The types of techniques defined have become the basis for many hospital treatment programs. Johnson describes the early days of treatment at St. Marys Hospital in Minneapolis.

Treatment of the alcoholic involves a multidisciplinary team. Physicians, nurses, psychologists and, above all, addiction counselors work with substance abuse patients in a milieu oriented, group oriented treatment program — usually on an inpatient, well-structured basis. Overcoming denial and achieving individual honesty are goals for each patient, with confrontation (identifying what is seen in others) and leveling (what is seen in self) as basic techniques. Family involvement is crucial. Family members are seen to develop rigid self-defeating denial systems and play enabling roles with the substance abuse patient. Structured living, intensive counseling, participation in Alcoholics Anonymous and Narcotics Anonymous, and family participation in Al-Anon are all important in treatment. Frequently, patients who enter treatment angry, resistant, and perhaps threatening leave serene, smiling, accepting, and grateful for their experience. Of course, inpatient treatment does not always work, but published and unpublished reports indicate at least a 50-50 chance for recovery for an abuser.<sup>20</sup> As noted, there are indications that physicians have a better prognosis than other substance abusers, probably because of better social margin.

Following are some of the treatment programs that have successfully treated physicians in Kansas:

Menninger Foundation, Box 829, Topeka, KS 67218

St. Johns Hospital, 139 N. Penn, Salina, KS 67401

St. Joseph Medical Center, Alcoholism Treatment Unit, 3600 E. Harry, Wichita, KS 67218

Valley Hope Alcoholism Treatment Center, 709 W. Holmes St., Norton, KS 67654 and 1816 N. 2nd St., Atchison, KS 66002

### Support Groups

Physicians in Kansas participate in Alcoholics Anonymous and Narcotics Anonymous, and there are a number of local chapters. In Wichita alone there are approximately 120 weekly meetings of AA. Although there are no special organizations for recovering physicians in Kansas at this time, some recovering physicians maintain close contact with

*(Continued on page 529)*

# Alcohol — Drugs — W.A.R.T.S.\*

*\*With Alcohol Related Troubles Starting*

G. WILLIAM NICE, M.D., *Topeka*

RICH MAN, poor man, beggar-man, thief. Doctor, lawyer, merchant, chief. Which one of these can become an alcoholic? It usually is easy to diagnose acute or chronic alcoholism when the patient comes in with vomiting, abdominal cramps, severe cough, tachycardia, jaundice with a big liver or a small liver, near coma, delirium tremens, multiple bruises or fractures, cigarette burns, depression, and alcohol on his/her breath. It is particularly significant if laboratory tests reveal anemia, abnormal liver functions, and an elevated blood alcohol. A history of poor work performance and marriage problems are important factors as well. However, if we keep waiting for the perfect picture of acute or chronic alcoholism, we will miss a significant number — perhaps as many as 95 per cent — of those people with alcohol related troubles.

Such people can be divided into two groups:

*The Non-Alcoholic:* The non-alcoholic can frequently tolerate any damage done by alcohol. However, persons with medical or psychiatric disorders who drink are very vulnerable to serious consequences. As many as 50 per cent of men between the ages of 18 and 25 years may have occasional problems such as arrest for drunk driving, time missed at work, and family or other interpersonal problems.

*The Alcoholic:* The person with serious and persistent alcohol related life problems can be labeled with a disease called "alcoholism." It is important to try to distinguish between the effects of alcohol on normal, healthy persons; the problems this drug can cause in persons with mental or physiologic disease; and the persistent alcohol centered life problems that occur in alcoholism.

There are many ways to define alcoholism<sup>1</sup> — in terms of quantity consumed, frequency of use, and pattern of drinking; the degree of psychologic discomfort experienced when alcohol is unavailable;

physical dependence — drinking large amounts daily; and serious life problems related to alcohol such as divorce, loss of job one or more times, multiple arrests, or serious physical disease (cirrhosis, pancreatitis, peripheral neuropathy, cardiomyopathy, or cerebral atrophy).

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**Alcoholism is associated with a multitude of physical and mental manifestations. A thorough understanding of the body's responses to alcohol under varying conditions of physical and mental health is required for thorough evaluation, accurate diagnosis, and appropriate treatment of both the alcoholism and its attendant disorders.**

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What are the indications for hospitalizing the alcoholic for treatment? Hallucinations or seizures would indicate that admission was appropriate. Existence of a severe medical problem — related to alcohol or not — cirrhosis, cerebral atrophy with loss of memory, peripheral neuritis, cardiomyopathy, addiction to another drug, congestive heart failure, diabetes out of control, pneumonia, fractures, impending coma, head injury, and gastrointestinal bleeding are all indications for admission. The acute withdrawal syndrome with acute brain damage requires hospitalization. The family may force the admission with statements such as, "You go to the hospital now, or I'm getting a divorce tomorrow!" The court or the employer may demand admission or treatment for alcoholism. There are several choices other than hospitalization for treatment of the non-critical alcoholic — Alcoholics Anonymous, half-way houses, Valley Hope, private psychiatrists, and others. However, treatment of the chronic alcoholic is a long-term process involving many months to many years — perhaps even a lifetime. Inpatient detoxification may be necessary for a few days. Medical screening is necessary to determine if hospitalization is necessary. If the patient wants to attempt detoxification at home, it is imperative that there is an understanding that if he does not succeed, hospitalization will be necessary.

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This paper was presented at St. Francis Hospital and Medical Center, Topeka, June 12, 1980, at the Nursing Continuing Education Program, "Alcoholism: A Human Problem," in cooperation with Philip E. Mills, Jr., M.D.; Robert E. Roeder, M.D.; and Robert W. Braun, M.D.

Address reprint requests to Dr. Nice, 112 Medical Arts Bldg. East, Topeka, KS 66604.



The more familiar physiological actions of alcohol are:

- Inhibition of lipase, thus decreasing the amount of enzyme available for hydrolysis of neutral fats to toxic fatty acids.

- Speeding up of replacement of surfactant in the injured lung. The life of surfactant is apparently a few hours, and if it is injured, replacement is necessary for normal gas exchange.

- Reduction of surface tension in pulmonary edema (very useful in the treatment of congestive heart failure, fat embolism, amniotic embolism).

- Dilation of blood vessels from flush to shock level.

- Cooling by evaporation.

- Irritant to mucus membranes and to skin.

- Astringent.

- Solvent.

- Denatures protein by dehydration and precipitation.

- Increases saliva and gastric juice, produces salivation from mild local irritation; the gastric secretion in the distal stomach and duodenum is probably a psychic effect.

- Concentrations of alcohol above 15 per cent inhibit motility and secretions of the stomach and are irritating to the mucosa. The emetic effect is the same in intravenous alcohol (120 mg/100 cc), which indicates that the emetic action is probably due to the effect on the central nervous system.

- One or two ounces of whiskey will usually produce a rise in blood pressure, a slight acceleration of pulse rate, and a small increase in cardiac output. Much larger doses may have the opposite effect.

- Increases urine output, which is usually a result of CNS depression. Alcohol inhibits release of anti-diuretic hormone (ADH) of the pituitary.

- Alcohol in moderate doses is not harmful to the function of a normal or even a diseased kidney, except possibly for the arteriosclerotic kidney.

- A marked reduction of liver glycogen may occur with an increase in liver fat. This is associated with a pronounced inhibition of glycogenesis.

- Alcohol depresses the nervous system, beginning with the higher functions and later extending to more vegetative mechanisms. Respiration may be increased at first, then depressed. Vision may be impaired, then euphoria, muscular incoordination, and removal of inhibitions follow. The necrosis of nerve cells and myelinated structures found in Wernicke-Korsakoff syndrome may be due in part to alcohol, but there has been considerable evidence presented that thiamine deficiency is most likely the cause and not alcohol.

The effect of alcohol is dependent on many factors including blood level (both the actual level and rate of increase in blood level), difference in personal alcohol use, and effect in different tissues. The distribution is controlled by: (1) high diffusibility — due to the low molecular weight (one-fourth that of glucose) it passes rapidly through body membranes; and (2) Complete solubility in water — its distribution in the body parallels the water content of each tissue or fluid. Due to the diffusibility, the blood alcohol to alveolar air constant is 2,100:1.

There are certain solutions that are compatible or incompatible when given with alcohol, and certain drugs are incompatible when given with alcohol. Compatible solutions include dextrose, invert sugar, sodium chloride, and protein hydrolysate. Among the incompatible solutions are lactated Ringer's solution, plasmanate, and Ringer's solution.

Certain drugs may cause a serious and often potentially lethal reaction when given with alcohol. Some of these are barbiturates, chloral hydrate, carbamazepine (Tegretol), disulfiram, and other acetaldehyde-dehydrogenase inhibitors (Antabuse, Diabinese), insulin, meprobamate, methotrexate, morphine and narcotic analgesics, muscle relaxants, nitrates and nitrites, sedatives, hypnotics, tricyclic antidepressants, and metronidazole (Flagyl). It has been suggested that nearly 50 per cent of all prescription drugs are affected by alcohol use.

Small amounts of alcohol may cause severe pain in about 15 per cent of patients with Hodgkin's disease, so patients with this diagnosis should use alcohol with caution.

Several laboratory tests are altered by alcohol use. A few of the more common ones are amylase (high), uric acid (high), liver function tests, blood glucose, serum magnesium (usually low), BUN, creatinine, electrolytes, arterial blood gases, electrocardiogram, and porphyrins (high). However, it is better to recheck abnormal tests before treating diseases that are laboratory artifacts caused by alcohol.

The neurologic complications of alcoholism may appear before the diagnosis of alcoholism is made.<sup>2</sup> The most common syndromes are polyneuropathy, the withdrawal syndrome, and the combination of Wernicke's encephalopathy and Korsakoff's psychosis. Other syndromes frequently seen include cerebellar ataxia, convulsions, acute hallucinosis, myopathy, and coma. Less commonly seen are Marchiafava-Bignami disease and central pontine myelinolysis.

Peripheral neuropathy of alcoholism most commonly presents as a polyneuropathy. The clinical picture may develop after several weeks, months, or



even years of excessive drinking and poor nutrition. There is often severe pain in all four extremities — usually worse in the legs — and there is usually absent or reduced deep tendon reflexes. There is a decrease in tactile and deep sensibility, some progressing to a stocking-glove distribution. This may be followed by weakness of the legs, foot-drop, and ataxia in walking. The syndrome of alcoholic myopathy frequently occurs at the same time. This presents as limb-girdle weakness, particularly the hip quadriceps, making it difficult for the patient to get out of bed. The syndrome of peripheral neuropathy is most frequently found with alcohol use along with malnutrition; however, it can occur in severe malnutrition without the use of alcohol. Experimental and clinical evidence support the view that several of the B vitamins can cause neuropathy. There is, however, a deficiency of thiamin in the blood, urine, and muscle in alcoholic neuropathy. Treatment should be started as soon as possible and should include a good diet with vitamins. Vitamin B complex and 25-50 mg of thiamin should be given intravenously with glucose daily until improvement begins. Then the vitamins may be given orally.

Wernicke's disease and Korsakoff's psychosis are the most frequent disorders of the central nervous system associated with alcohol and nutritional depletion. The term "cerebral beriberi" has often been applied to these two conditions.

Wernicke's disease is recognized by impaired mentation, ataxia, disturbed ocular motility, and polyneuropathy.<sup>3</sup> The patient usually has double vision and unsteady gait, but may be unaware of them. There is usually weakness of the external recti muscles along with horizontal or vertical nystagmus. Occasionally ptosis, miosis, unreactive pupils, or complete paralysis of eye movement may occur. The patient may have polyneuropathy or cerebellar ataxia. He may have alcohol withdrawal symptoms such as delirium, tremulousness, confusion, agitation, hallucinations, dull mentation, and disorientation. With a good diet including thiamin, the patient may improve, and then reveal the syndrome known as Korsakoff's psychosis. The most serious mental abnormality seen in Korsakoff's psychosis is disordered memory function. Recent retentive memory and the ability to learn new material are both severely impaired. Retrograde amnesia is also very common. Confabulation is almost always present. The Wernicke-Korsakoff syndrome usually begins abruptly. Thiamin is the treatment of choice and should be given intravenously or intramuscularly (25-50 mg/day) until improvement occurs, then continued orally until marked improvement occurs.

Some degree of recovery is possible except in severe cases which are often complicated by cirrhosis, cardiac disease, and anemia. Mortality may be 15-20 per cent. Incomplete recovery of ataxia occurs in more than one-half of patients, but complete recovery of from Korsakoff's psychosis occurs in less than one-third of these patients. Cerebral and brainstem lesions are frequently seen in the mamillary bodies, terminal fornices, periaqueductal region of the mid-brain, in the floor of the fourth ventricle, dorsal motor nucleus of the vagus, and in the anterior superior parts of the cerebellar vermis. Microscopically, the lesions consist of necrosis of both nerve cells and myelinated structures. There is often a striking glial reaction involving the center of the lesion. Endothelial proliferation and fresh hemorrhages may be found. The principle change in the vermis of the cerebellum is a loss of Purkinje cells and gliosis of the molecular layer of the cortex.

Although usually associated with chronic alcoholism, Wernicke-Korsakoff syndrome has been observed as a complication of chronic hemodialysis, pernicious vomiting of pregnancy, thyrotoxicosis, gastric carcinoma, and after prolonged intravenous therapy.

The changes that occur with cerebral atrophy can be demonstrated by CAT scan. It has been demonstrated within the past two years that if the cerebral atrophy is due to alcoholism, and if the person will stop drinking alcohol and maintain an adequate diet with vitamins, the cerebral atrophy in mild or moderate extent may be reversible.<sup>4</sup> This is not true in all cases, and there are probably other factors involved. However, it does represent a change in the prognosis for this type of cerebral atrophy. The intelligence and memory do not necessarily return to pre-cerebral edema stage, but usually there is definite improvement.

Coma may be the result of acute alcohol intoxication with or without other drugs, or the result of alcohol related liver disease. A blood alcohol level greater than 200 mg/100 ml is very helpful in making the diagnosis, as is the usual urine screen for drugs (narcotics, barbiturates, tranquilizers). Often family or friends who accompany the patient bring bottles containing substances that the patient may have taken. The patient should also be checked for head trauma, other bruises, infection, diabetes, and other routine coma causes. The treatment of ethyl alcohol overdose with coma (frequently found in younger people) is bed rest with observation. This is often all that is needed. If it appears that there is a chronic alcohol problem, then intubation may be necessary for ventilation. If intravenous fluids are necessary, it



is usually wise to add 25-50 mg of thiamin. Some advise using 1000 ml of 10 percent fructose to increase metabolism of alcohol. The risk of toxicity, however, has limited this treatment. If methyl alcohol use is known or strongly suspected, or severe acidosis (pH below 7.0) is determined, hemodialysis is often the treatment of choice. If a narcotic overdose is suspected, and the urine for drug screen is available, or if there is a history of narcotic use with pinpoint pupils, then naloxone 0.4 mg (or other narcotic antagonist) should be given intravenously every five to ten minutes for a total of three doses unless respiration and pupils improve. Other treatment may be necessary for alcohol use with barbiturates or tranquilizers. However, the basic treatment is to maintain adequate respiration and circulation. The treatment of hepatic coma requires much more extensive study and treatment.

Cerebellar ataxia is one of the more conspicuous effects of alcohol on the nervous system. The milder form may exhibit a wide-based stance and a slow, shuffling, short-stepped gait. Later, it may be so severe that the patient cannot walk or stand without support. Ataxia of the legs is usually more severe than of the arms, and this may be accompanied by peripheral neuritis weakness.

Convulsions and delirium tremens are also very common in the patient with chronic alcoholism. Seizures or "rum fits" usually occur 12-48 hours after alcohol ingestion is decreased or discontinued. This is especially true with epileptics. The seizure may occur very unexpectedly, especially when the patient is hospitalized for illness or surgery. These seizures are usually generalized, and frequently patients' EEG is normal. A focal seizure may indicate a brain tumor or subdural hematoma. Hypoglycemia must be ruled out as a cause of the seizure. Convulsions have also been reported with the hypomagnesemia that may accompany alcoholism.

Alcoholic hallucinosis is generally an auditory hallucinosis, but it may be visual also. Alcoholic hallucinosis is differentiated from delirium tremens in that the patient is well-oriented even though he may become violent and require sedation or a tranquilizing drug.

Withdrawal syndrome may range from mild tremor to fatal delirium tremens. The physiology is apparently related to abstinence from alcohol and not to a specific diet or vitamin deficiency. Early symptoms include difficulty in sleeping, restlessness, tremor, and anxiety. Tremor usually appears about eight hours after drinking is terminated. Within a matter of hours, the patient is jittery, startles easily, then may develop fever, rapid pulse, and

seizures. Dehydration is common with continuous motor and psychic unrest. He usually begins to talk constantly, becomes incoherent, and then frequently develops hallucinations. The mortality rate at this stage is usually 15-30 percent. A careful search must be made to rule out head injury, subdural hematoma, meningitis, and infections such as pneumonia. The treatment must be started as soon as diagnosis is made. Rest and intravenous fluids are usually necessary, and 50-100 mg of thiamin should be given since a carbohydrate load in a malnourished person may precipitate Wernicke's encephalopathy. Hypomagnesemia should be treated because it can contribute to the delirium.

Marchiafava-Bignami disease is rare and is usually found in patients with severe malnutrition, and most frequently with alcoholism. The disease usually affects middle-aged males, and complete recovery is rare. The clinical picture develops during a period of a few days or months. The patient is agitated, confused, and has hallucinations, memory disturbance, language disturbance, impaired judgment, and progressive dementia. He may lose control of gait and motor skills, and develop seizures as well as hand tremor and dysarthria. The pathological picture includes demyelination of the central parts of the corpus callosum, beginning in the most anterior parts and extending caudally. Similar changes may affect the central parts of the anterior commissure, the optic chiasm and tracts, and in severe cases, the central white matter of the frontal lobes. There may be extensive tissue destruction and cavitation. This disease was first reported in Italian males who consumed large amounts of crude red wine. The changes found in this disease have been found in conjunction with Wernicke's disease and also in malnourished non-alcoholic patients.

Central pontine myelinolysis usually occurs in alcoholic and malnourished patients.<sup>5</sup> The pathological lesion occupies the central basis pontis, and there is myelin destruction involving all tracts regardless of their site of origin, termination or function, including the corticospinal, corticobulbar, corticopontine, and pontocerebellar tracts. The lesion usually extends from the lower border of the midbrain to the lower pons, sparing the most caudal pons at the pontomedullary junction. Diagnosis is usually made at autopsy. There is more often than not an unusual clinical picture with flaccid quadriplegia, weakness of the face and tongue, inability to swallow and speak, and unusual sensory changes. It may occur with delirium tremens, pneumonia, or other complication of alcoholism. Patients often die from respiratory failure. Control of the intramelinic ede-



ma may give temporary improvement. Remyelination may occur in a rare case.

Psychiatric problems of alcoholics must be clearly defined; true psychiatric illness, which may account for excessive alcohol use, is differentiated from the psychiatric sequelae of chronic alcoholism. Questions as to whether alcoholism is secondary to an underlying psychiatric disorder or whether the psychiatric state is secondary to the alcoholism should be discussed in every case where both are large factors in the clinical picture.<sup>6</sup> A careful history should help determine if the symptoms of psychiatric illness were present before the onset of excessive or constant drinking. Several studies have reported that alcohol is used excessively by 8-32 per cent of manic depressive patients. Cadoret reported that 41 per cent of 173 persons with primary alcoholism had a depressive syndrome. Women more commonly have a history of primary depression before the onset of alcoholism while men tend to develop depression after the onset of alcoholism (usually with a history of drinking longer than ten years). Women alcoholics are more likely to have suicidal tendencies and delusions. Drinking women with depression appear to have longer periods of abstinence than women with primary alcoholism. Men with secondary depression tend to drink in periodic episodes and are more likely to be "bender" type drinkers than women. First-degree relatives of male alcoholics have a higher incidence of alcoholism and depressive reactions. Alcoholics have a higher rate of suicide and also suicide attempt than non-alcoholics. Suicidal behavior is more common in the later stages of alcoholism than in earlier phases. One-third of all reported suicides are associated with alcohol abuse, particularly among white middle-aged men.

A second psychiatric illness often associated with alcoholism is anti-social personality, or sociopathy, which is generally characterized by a lifelong history of problems with authority, impulsive and sometimes aggressive behavior, difficulty in developing close, meaningful relationships, and overall disruption of conventional productive life functions such as school and work.<sup>6</sup> Several studies have found alcoholism in about 40 per cent of jail populations. Women alcoholics tend to have a higher incidence of primary depression. However, in men the most commonly associated psychiatric diagnosis predating the onset of alcoholism is anti-social personality. It has been suggested that anxiety neurosis in men is often masked by alcoholism. Several studies have reported that more than 30 per cent of alcoholics are also schizophrenic. However, many still feel that

perhaps this figure is too high. Schizophrenics probably use alcohol as a self-prescribed medication, and it is estimated that 22-35 per cent use alcohol to excess.

About 20-30 per cent of male alcoholics use illicit drugs or abuse prescription drugs. It has been reported that almost twice that many women alcoholics admit drug abuse, especially misuse of prescription drugs.

Alcohol is capable of inducing dysphoric moods and behavior and other psychologic changes in alcoholics and in non-alcoholics who do not have other psychiatric disorders. Intoxication per se may thus be a major factor in the development of feelings of depression or sadness and suicidal thoughts. Two types of suicide attempts have been described. The abreactive type is characterized by sudden, unpredictable attempts which occur at the onset of drinking or at a time of rapidly increasing blood alcohol levels. The second type results from a depressive syndrome of chronic intoxication. The depression and suicide thoughts are a consequence of excessive alcohol intake and often clear when the drinking has stopped. Chronic excessive use of alcohol can mimic a variety of psychiatric disorders. Therefore, psychiatric diagnosis may not be accurate during the period of intoxication. Alcoholic hallucinosis usually follows a prolonged episode of drinking and is characterized by auditory hallucinations occurring in a clear sensorium in a person with a history of chronic alcohol abuse. Alcoholic paranoia is characterized by jealousy resulting from delusions of infidelity, especially in those who have had difficulty establishing mature relationships and whose personality is characterized by stubbornness, suspiciousness, and difficulty in accepting discipline.

Amblyopia is often produced by alcohol abuse. It is a remarkably uniform disease of vision which develops slowly. There is blurred vision and difficulty with reading as well as photophobia and retrobulbar discomfort when moving the eyes. Examination of the eye may yield normal results, or may show slight redness of the temporal margins of the optic discs. Pallor may appear later in the chronic alcoholic. Amblyopia may occur in conjunction with Wernicke's disease, cerebellar degeneration, Marchiafava-Bignami's disease, and peripheral neuritis. Treatment requires a good diet with oral or parenteral vitamins, and preferably complete termination of alcohol and tobacco use. Vitamins and diet are apparently the main factors in treatment. Improvement depends upon how long the disease process has continued and how serious it has become before treatment is started.



Methyl alcohol can cause severe metabolic acidosis. Blindness may occur; and as little as two ounces may be fatal. Treatment includes induction of vomiting if treatment is started within 15-30 minutes, one ounce of ethyl alcohol every three or four hours for the average adult (to inhibit the metabolic oxidation of methyl alcohol), and sodium bicarbonate intravenously for the metabolic acidosis. Bruises of the eye are common due to falls and fights. Sometimes injuries are self-inflicted. One woman who had been drinking deliberately stabbed herself in the eye with a sharp pencil.

Many ENT physicians can diagnose alcoholism by the reddened edematous membrane in the pharynx. There is evidence that there is an increased incidence of oropharyngeal, laryngeal, esophageal, and primary hepatocellular carcinoma in alcoholic patients.

The speech of the alcoholic is well known. Perhaps the dark "L" sound such as in the word, "climbing" indicates a pre-alcoholic or alcoholic as much as the slurred speech or dropped syllables.

Pneumonia is more common in alcoholic than in non-alcoholic patients. Pulmonary tuberculosis is still more common in alcoholics. Chronic airway obstruction is present in alcoholics, possibly because alcoholics often tend to be heavy smokers. Even in non-smoking alcoholics obstructive lung disease is more prevalent, so it remains possible that alcohol directly affects the lungs.

The skin is also marked by alcohol. Bruises, purpura, bleeding nose and gums, and other hemorrhagic results are seen. The alcoholic flush is well known and is often accompanied by hypotension, tachycardia, and feelings of chest constriction — possibly due to sensitivity to acetaldehyde or the outpouring of amines. Spider angiomas and telangiectasis, as well as rhinophyma or acne rosacea, are often seen in consistent drinkers. Ninety per cent of bed burns and chair burns are alcohol and tobacco related.

The endocrine system is also affected by alcohol. Acute alcohol ingestion causes general body stress and increases blood cortisol levels. Sudden withdrawal in a chronic user also evokes hypercorticism. Chronic alcohol intake along with associated malnutrition results in decreased protein synthesis, including synthesis of steroid hormones. The male alcoholic may develop feminization due to reduced testosterone, possibly increased estrogens, and probably an inability of the liver to degrade the circulating estrogens. This may result in sparse pubic, chest, and axillary hair, gynecomastia, and testicular atrophy.

The bone system is also disturbed in the patient who uses alcohol on a regular basis. Fractures of the skull, extremities, ribs, and spine are more common in the alcoholic; this should be investigated in every patient admitted for acute alcoholism. It has been well-known for many years that alcoholism should be considered when a patient is admitted with a fracture that occurred two or three weeks prior to admission. Aseptic necrosis of the bone, especially the hip joint, is much more prevalent in alcoholics as well as in patients with prolonged or high doses of steroids, such as those with renal transplants. So, aseptic necrosis with no history of prolonged or high dose steroid therapy is indicative of alcoholism.

The heart is not spared from the effects of alcohol. Alcoholic cardiomyopathy has been described for quite some time. The diagnosis is frequently made in a patient with congestive heart failure in the absence of a known cause for heart disease other than a history of alcoholism. The clinical picture usually includes palpitation, congestive heart failure, and enlarged heart; and thromboembolic disease with mural thrombi is frequently present. Arrhythmias may include atrial and ventricular gallop, atrial premature contractions, atrial fibrillation, atrial flutter, paroxysmal atrial tachycardia, junctional tachycardia, premature ventricular contractions, and ventricular tachycardia.<sup>7</sup> Autopsy usually reveals hypertrophy of the myocardial fibers, increased glycogen and neutral lipid, and interstitial edema necrosis. The three-year mortality rate is greater than 40 per cent following the development of symptoms. The prognosis is much better in those patients with a shorter duration of symptoms and those who are able to stop all alcohol. Recently echocardiography has been helpful in diagnosing alcoholic cardiomyopathy, but does not differentiate it from other forms of cardiomyopathy.

Consumption of alcohol during pregnancy can be dangerous to the health of the mother and also to the baby. The most common features of fetal alcohol syndrome have been in the area of growth and performance such as prenatal growth deficiency, postnatal growth deficiency, microcephaly, and developmental delay or mental deficiency. Other findings include craniofacial abnormalities such as short palpebral fissures, maxillary hypoplasia, and epicanthal folds; cardiac defects; and abnormal palmar creases. Other abnormalities may include anomalies of joints, external genitalia and ears, hemangiomas, accessory nipples, cleft palate, ptosis, strabismus, and fine motor dysfunction.<sup>8</sup>

Rosett<sup>9</sup>, in his study, reported that 29 per cent of the babies born to heavy drinkers were considered to



be normal. This compares to 64 per cent of those babies born to women who drank in moderation, and 65 per cent of those babies born to women who drank rarely. It is difficult to determine which baby will be born with fetal alcohol syndrome, but the chances of having an abnormal baby when the mother has been drinking heavily during pregnancy is well known. Alcoholic ketoacidosis<sup>10</sup> is often recognized in women who drink more than moderately, and the fetal mortality rate in this syndrome is extremely high. The treatment consists of liberal quantities of fluids, glucose, and electrolytes. In the non-diabetic, small doses of regular insulin are given to expedite glucose uptake and utilization while minimizing lipolysis and free fatty acid oxidation. Sodium bicarbonate is helpful for rapid reduction of the total hydrogen ion concentration.

Hematologic abnormalities occur most commonly in the cellular elements of the blood. Anemia is most often caused by alcohol-related folic acid deficiency, but iron deficiency anemia can result from gastrointestinal bleeding, or from a hemolytic syndrome. Alcohol also directly inhibits bone marrow proliferation of cellular elements and may produce sideroblastic anemia. Abnormalities of platelet production have been described, and thrombocytopenia may occur.

Alcohol is removed from the body primarily by metabolism in the liver (approximately 90%), and the other 10 per cent is mainly excreted by the lungs and kidneys. It has been demonstrated that alcohol is a direct hepatotoxin. Alcohol ingestion is associated with two prominent morphologic changes: (1) the accumulation of fat (triglycerides) in parenchymal cells; and (2) degeneration of cell organelles (visible as alcoholic hyaline-eosinophilic cytoplasmic inclusions). These changes may result from a direct hepatotoxic effect of alcohol rather than a deficiency of dietary factors. Electron microscopic studies of livers in normal persons given large quantities of alcohol reveal that hepatocellular mitochondria become more varied in size and shape, and several giant forms with crystalline inclusion may be found per cell, but not in all cells. Crystals composed of protein or protein and lipid also occur freely in the cytoplasm, mainly in alcoholics. Glycogen is depleted, fat droplets accumulate and coalesce, and smooth endoplasmic reticulum increases. The ribosomes of the rough-surfaced endoplasmic reticulum become detached and are free in the hyaloplasm.<sup>11</sup> Patients with acute alcoholic hepatitis may have the mitochondrial membranes disrupted, giving the impression of vacuole formation in mitochondria. Giant forms with crystalline inclusions are more

numerous, and clumping with interlocking of mitochondria appears. The degree of alcohol abuse and the mitochondrial size are usually closely related. The most distinctive change is the alcoholic hyaline membrane of Mallory. There is a zone of fibrillar material delimited from the rest of the cytoplasm by a single membrane. In some patients this fibrillar material is loose and not dense. In others, it is condensed, and the centers appear as solid cores. Sometimes it has the appearance of a smudged fingerprint made up of bundles of fibrils in a parallel array. This is the alcoholic membrane of Mallory. In advanced, but still active alcoholic liver disease, the features of acute alcoholic hepatitis — such as alcoholic hyalin and mitochondrial abnormalities — remain visible. The central veins show early fibrosis, and the centrilobular areas may be replaced by zones of hyaline sclerosis, a lesion that undergoes subsequent fibrosis, and may contribute to the development of portal hypertension. Cirrhosis in the alcoholic is usually of the micronodular type, with small, uniform regeneration nodules separated by fibrous bands containing mononuclear cells and proliferating bile ductules. Occasionally, cirrhosis is of the macronodular type, with coarse, irregular regeneration nodules, and broad intervening bands of fibrous tissue.

The patient with acute alcoholic hepatitis usually has abdominal pain, a large liver, gastritis or pancreatitis, vomiting (often with hematemesis), and ascites. He may have jaundice, spider angiomas, and palmar erythema. Itching is frequently present, and delirium tremens may occur. The liver function tests may reveal elevated bilirubin, elevated serum transaminase, increase in alkaline phosphatase, depressed albumin, and depressed clotting factors. The serum cholesterol may be abnormal, hypokalemia may be present, and anemia is frequently present due to bleeding or hemolysis. In compensated cirrhosis, the only abnormalities of liver function may be mild BSP retention and an increased urinary excretion of urobilinogen. With progressive decompensation, serum protein concentrations fall, and hyperbilirubinemia and BSP retention increase. Serum enzyme levels are usually only slightly increased. One of the most effective diagnostic tests for alcoholism is the high-density lipoprotein. It is markedly elevated in alcoholism and in long distance runners. If the high-density lipoprotein is greater than 55 mg in men or 70 mg in women, there should be a high index of suspicion for alcoholism. One writer reported that this test is a very powerful predictor of alcoholism, and this may turn out to be the most important use for HDL. GGPT is perhaps the most



sensitive enzyme test for liver disease, but not specific for alcoholism.

Gamma imaging of the liver is probably one of the most helpful tests to diagnose alcoholic liver disease. Enlarged liver alone or with heterogeneity radiocolloid will suggest consideration of alcoholism. In addition, there is frequently increased uptake by both bone marrow and spleen in the alcoholic patient. CT scan is sometimes helpful.

Treatment of liver disease in the alcoholic requires long-term abstention from alcohol intake. In patients with acute alcohol hepatitis, treatment should include bed rest and the diet should include proteins, vitamins, minerals, and adequate calories. Intravenous fluids with glucose, potassium, magnesium, and vitamins may be necessary. Ferrous sulfate or folic acid may be necessary. Salt intake should be restricted to 1 gm/day, especially if the patient has ascites.

Portal hypertension with upper gastrointestinal bleeding is a frequent complication of alcoholic cirrhosis, and bleeding may be life threatening. The patient may bleed from esophageal varices, acute gastric erosions, or peptic ulcer. It is most important to determine the site of bleeding, if possible. Lavage with ice water may be helpful to control the bleeding if due to gastric erosion or ulcer, but this usually will not help much if the bleeding is due to esophageal varices. Infusions of Pitressin (20 units intravenously in 10 minutes), or continuous infusion of vasoconstrictor drugs into the mesenteric artery may help control the bleeding. The surgical procedure of choice is a portacaval anastomosis, which controls bleeding by lowering portal pressure. This is probably indicated only if the patient with portal hypertension has esophageal varices that have bled.

When ascites develops, sodium intake must be restricted to 1 gm/day. In addition, diuretics, such as spironolactone (50-200 mg/day) with hydrochlorothiazide (50-100 mg/day) may be necessary. Paracentesis may be required for diagnosis but is not part of ordinary treatment, except when impaired renal function prevents safe or effective diuretic therapy.

The patient with hepatic coma requires careful evaluation to determine the cause. It may be due to gastrointestinal bleeding, fluid and electrolyte imbalance, pH disturbance, depressant drugs, intercurrent infection, or increased intake of protein. In all patients, procedures that lower blood ammonium concentration by reducing enteric bacterial breakdown of amino acids and urea should be started. This should include protein restriction, cathartics, and enemas to clear the intestine of its nitrogenous content and neomycin to reduce the bacterial flora. Lac-

tulose may be helpful in lowering the blood ammonia levels of patients with chronic encephalopathy. These patients require careful and long-term treatment.

Alcoholics apparently require higher doses of barbiturates and volatile anesthetics for induction and maintenance of necessary levels of surgical anesthesia. The presence of alcohol in the blood does not present a major problem in surgery, but the complications — especially brain damage, head injury, cirrhosis, pneumonia, heart disease, gastrointestinal bleeding, anemia, and other neurological damage — may present serious problems.

Acute pancreatitis is associated with alcoholism in a high percentage of cases reported in the literature (40-50%). Alcohol has replaced biliary tract disease as the major etiologic factor in patients dying with acute pancreatitis. Pain is present in 90 per cent of cases. The pain starts in the abdomen and may radiate to the back. Sometimes the pain is diffuse and may be difficult to locate. There is usually fever, hypotension, shock, pleural fluid, respiratory or renal failure, and jaundice. Alcoholic pancreatitis may present with recurrent episodes or may become chronic. The serum amylase in alcoholic pancreatitis may be 250-500 units compared to 1000 units usually associated with biliary tract disease. Serum lipase elevation helps to confirm the diagnosis. Hypocalcemia, hypomagnesemia, and hypokalemia may occur, and metabolic acidosis is seen in severely ill patients. A high blood sugar will occur in about one-half of cases. Ultrasound is useful to diagnose pancreatic pseudocyst or other pancreatic masses. Treatment consists of resting the pancreas by administering intravenous fluids, pain medication, and cessation of alcohol if that is a factor. Factors that indicate severe disease include blood sugar >200 mg/100 ml, white blood cell count >16,000, lactic dehydrogenase >350, SGOT >250 on admission, and age >55 years. During the first 48 hours after admission, severe disease may include a fall in hematocrit of more than 10 per cent, serum calcium less than 8 mg, an increase in BUN more than 5 mg, arterial PO<sub>2</sub> less than 60, and an estimated fluid sequestration of more than 6 liters.

The pain of chronic pancreatitis is usually less severe than acute pancreatitis, and a long history of alcohol use is frequently found. The patient often complains of bulky, foul-smelling stools with oil droplets in the water, and he may or may not have diarrhea, fever, abdominal mass, jaundice, hematemesis, and evidence of weight loss. Treatment includes 29 gm of pancreatic extract with each meal; 2.5 gm of sodium bicarbonate may be added after

TABLE I  
MAJOR CRITERIA FOR THE DIAGNOSIS OF ALCOHOLISM

Criterion	Diagnostic Level	Criterion	Diagnostic Level
<b>TRACK I. PHYSIOLOGICAL AND CLINICAL</b>			
<b>A. Physiological Dependency</b>			
1. Physiological dependence as manifested by evidence of a <i>withdrawal syndrome</i> when the intake of alcohol is interrupted or decreased without substitution of other sedation.* It must be remembered that overuse of other sedative drugs can produce a similar withdrawal state, which should be differentiated from withdrawal from alcohol.		Fatty degeneration without other known cause	2
a) Gross tremor (differentiated from other causes of tremor)	1	Alcoholic hepatitis	1
b) Hallucinoses (differentiated from schizophrenic hallucinations or other psychoses)	1	Laennec's cirrhosis	2
c) Withdrawal seizures (differentiated from epilepsy and other seizure disorders)	1	Pancreatitis in the absence of cholelithiasis	2
d) Delirium tremens. Usually starts between the first and third day after withdrawal and minimally includes tremors, disorientation, and hallucinations.*	1	Chronic gastritis	3
2. Evidence of <i>tolerance</i> to the effects of alcohol. (There may be a decrease in previously high levels of tolerance late in the course.) Although the degree of tolerance to alcohol in no way matches the degree of tolerance to other drugs, the behavioral effects of a given amount of alcohol vary greatly between alcoholic and nonalcoholic subjects.		Hematological disorders:	
a) A blood alcohol level of more than 150 mg without gross evidence of intoxication	1	Anemia: hypochromic, normocytic, macrocytic, hemolytic with stomatocytosis, low folic acid	3
b) The consumption of one-fifth of a gallon of whiskey or an equivalent amount of wine or beer daily, for more than one day, by a 180-lb individual	1	Clotting disorders: prothrombin elevation, thrombocytopenia	3
3. Alcoholic "blackout" periods. (Differential diagnosis from purely psychological fugue states and psychomotor seizures)	2	Wernicke-Korsakoff syndrome	2
<b>B. Clinical: Major Alcohol-Associated Illnesses</b>			
Alcoholism can be assumed to exist if major alcohol-associated illnesses develop in a person who drinks regularly. In such individuals, evidence of physiological and psychological dependence should be searched for.		Alcoholic cerebellar degeneration	1
		Cerebral degeneration in absence of Alzheimer's disease or arteriosclerosis	2
		Central pontine myelinolysis } diagnosis only	2
		Marchiafava-Bignami's disease } postmortem	2
		Peripheral neuropathy (see also beriberi)	2
		Toxic amblyopia 3 Beriberi	3
		Alcohol myopathy 2 Pellagra	3
		Alcoholic cardiomyopathy 2	
<b>TRACK II. BEHAVIORAL, PSYCHOLOGICAL, AND ATTITUDINAL</b>			
All chronic conditions of psychological dependence occur in dynamic equilibrium with intrapsychic and interpersonal consequences. In alcoholism, similarly, there are varied effects on character and family. Like other chronic relapsing diseases, alcoholism produces vocational, social, and physical impairments. Therefore, the implications of these disruptions must be evaluated and related to the individual and his pattern of alcoholism. The following behavior patterns show psychological dependence on alcohol: . . .			
		1. Drinking despite strong medical contraindication known to patient	1
		2. Drinking despite strong identified, social contraindication (job loss for intoxication, etc.)	1
		3. Patient's subjective complaint of loss of control of alcohol consumption	2

\*Some authorities term this "pharmacological addiction."

meals; and cimetidine, 300 mg, may be given before meals to inhibit acid secretion. Surgical procedures to relieve pain are often not satisfactory. Terminating the use of alcohol is a necessary part of the treatment, but often is not accomplished. Long-term use of narcotics should be avoided if possible.

The kidney is usually not a target for damage by

alcohol use. Occasionally in severe liver disease, severe pancreatitis or other alcohol related disease, there may be elevation of the BUN. The one exception would be ingestion of methyl alcohol.

The use of alcohol and drugs in the teen-age population is apparently increasing. More than 90 per cent of high school students have had some



experience with alcohol by age 18 years and nearly one-half of high school seniors use alcohol at least three times/month. One report from Illinois stated that 90 per cent of the teen-age group who use other drugs use alcohol as well. The teen-age alcohol user is also more apt to experiment with street drugs or abuse over-the-counter or prescription drugs. About 10-20 per cent of high school students who drink have some alcohol related problems, and the percentage is probably higher with the delinquent or drop-out student.

In addition to the physician, the hospital team should include personnel to provide nursing service, dietary service, physical therapy, occupational therapy, social service, alcohol counselling, and religious counselling. They should work closely with Alcoholics Anonymous, half-way houses, Valley Hope, and especially with the family of the alcoholic.

## Diagnosis

It is sufficient for the diagnosis of alcoholism that one or more of the major criteria are satisfied, or that several of the minor criteria in Tracks I and II are present (*Tables I and II*). If one is making the diagnosis because of major criteria in one of the tracks, he should also make a strong search for evidence in the other track. A purely mechanical selection of items is not enough; the history, physical examination, and other observations, plus laboratory evidence, must fit into a consistent whole to ensure a proper diagnosis. Minor criteria in physical and clinical tracks alone are not sufficient, nor are minor criteria in behavioral and psychological tracks. There must be several in both.

Perhaps the most careful chart on diagnosis of alcoholism has been developed by the Council on Alcoholism for the diagnosis of alcoholism.<sup>12</sup> The manifestations are divided into early, middle and late, and are grouped into three diagnostic levels:

*Diagnostic Level I:* Classical, definite, obligatory. This person must be diagnosed as being alcoholic.

*Diagnostic Level II:* Probable, frequent, indicative. This person is under strong suspicion of alcoholism. Other evidence should be obtained.

*Diagnostic Level III:* Potential, possible, incidental. These manifestations are common in people with alcoholism, but do not by themselves give a strong indication. Other evidence is needed before making the diagnosis of alcoholism.

## Divisions of Data

Data are assembled according to the type of material they represent. Therefore, there are separate data "tracks" — *Track I:* Physiological and Clinical; and *Track II:* Behavioral, Psychological, and Attitudinal. The Track II data are grouped together because behavioral manifestations imply attitudinal and psychological manifestations.

There is no rigid uniformity in the progress of the disease, but since early diagnosis seems to be helpful in treatment and recovery, manifestations are separated into "early," "middle," and "late." In addition to identifying early and late symptoms and signs, each datum was graded according to its degree of implication for the presence of alcoholism. Of course, some of the more definite signs occur later in the illness, but this does not mean that people with earlier signs may not also have alcoholism.

## Summary

The abuse of alcohol and the increase in alcohol related problems indicate that there is a need to consider the possibility of the diagnosis, then take a careful history and conduct a thorough physical examination with laboratory and x-ray studies to document the diagnosis. Then comes the hard part — explaining the diagnosis to the patient and getting him to stop drinking alcohol and accept referral to a treatment agency (if that is the best decision) and commit to a long-term treatment program for himself and his family.

## What Is An Alcoholic?

*We all know what an alcoholic is . . .*

*We hear it often in a song.*

*His clothes are ragged, he needs a bath . . .*

*And he wears his hair dirty and long.*

*When we see him on the street . . .*

*We all know he's a "boozer."*

*He's just lost his wife and job again . . .*

*And now he's a three-time loser.*

*If he is not drunk in the morning . . .*

*He is "stoned" by afternoon.*

*You can smell it on his breath anytime . . .*

*But he says he is going to stop drinking soon!*

*Five long years ago, it seems . . .*

*He much needed a friend.*

*But they were much too busy . . .*

*To have any time to spend.*

TABLE II  
MINOR CRITERIA FOR THE DIAGNOSIS OF ALCOHOLISM

Criterion	Diagnostic Level	Criterion	Diagnostic Level
<b>TRACK I. PHYSIOLOGICAL AND CLINICAL</b>			
<b>A. Direct Effects (ascertained by examination)</b>			
1. Early:		Blood and blood clotting:	
Odor of alcohol on breath at time of medical appointment	2	Anemia: hypochromic, normocytic, macrocytic, hemolytic with stomatocytosis, low folic acid	3
2. Middle:		Clotting disorders: prothrombin elevation, thrombocytopenia	3
Alcoholic facies	2	ECG abnormalities:	
Vascular engorgement of face	2	Cardiac arrhythmias; tachycardia; T waves dimpled, cloven, or spinous; atrial fibrillation; ventricular premature contractions: abnormal P waves	2
Toxic amblyopia	3	EEG abnormalities:	
Increased incidence of infections	3	Decreased or increased REM sleep, depending on phase	3
Cardiac arrhythmias	3	Loss of delta sleep	3
Peripheral neuropathy (see also Major Criteria, Track I, B)	2	Other reported findings	3
3. Late (see Major Criteria, Track I, B):		Decreased immune response	3
<b>B. Indirect Effects</b>			
1. Early:		Decreased response to Synaethen test	3
Tachycardia	3	Chromosomal damage from alcoholism	3
Flushed face	3		
Nocturnal diaphoresis	3		
2. Middle:			
Echymoses on lower extremities, arms, or chest	3		
Cigarette or other burns on hands or chest	3		
Hyperreflexia, or if drinking heavily, hyporeflexia (permanent hyporeflexia may be a residuum of alcoholic polyneuritis)	3		
3. Late:			
Decreased tolerance	3		
<b>C. Laboratory Tests</b>			
1. Major—Direct			
Blood alcohol level at any time of more than 300 mg/100 ml	1		
Level of more than 100 mg/100 ml in routine examination	1		
2. Major—Indirect			
Serum osmolality (reflects blood alcohol levels): every 22.4 increase over 200 mOsm/liter reflects 50 mg/100 ml alcohol	2		
3. Minor—Indirect			
Results of alcohol ingestion:			
Hypoglycemia	3		
Hypochloremic alkalosis	3		
Low magnesium level	2		
Lactic acid elevation	3		
Transient uric acid elevation	3		
Potassium depletion	3		
Indications of liver abnormality:			
SGPT elevation	2		
SGOT elevation	3		
BSP elevation	2		
Bilirubin elevation	2		
Urinary urobilinogen elevation	2		
Serum A/G ratio reversal	2		
		<b>TRACK II. BEHAVIORAL, PSYCHOLOGICAL, AND ATTITUDINAL</b>	
		<b>A. Behavioral</b>	
		1. Direct effects	
		Early:	
		Gulping drinks	3
		Surreptitious drinking	2
		Morning drinking (assess nature of peer group behavior)	2
		Middle:	
		Repeated conscious attempts at abstinence	2
		Late:	
		Blatant indiscriminate use of alcohol	1
		Skid Row or equivalent social level	2
		2. Indirect effects	
		Early:	
		Medical excuses from work for variety of reasons	2
		Shifting from one alcoholic beverage to another	2
		Preference for drinking companions, bars, and taverns	2
		Loss of interest in activities not directly associated with drinking	2
		Late:	
		Chooses employment that facilitates drinking	3
		Frequent automobile accidents	3
		History of family members undergoing psychiatric treatment; school and behavioral problems in children	3
		Frequent change of residence for poorly defined reasons	3



TABLE II (Continued)

Criterion	Diagnostic Level	Criterion	Diagnostic Level
Anxiety-relieving mechanisms, such as telephone calls inappropriate in time, distance, person, or motive (telephonitis)	2	2. Indirect effects	
Outbursts of rage and suicidal gestures while drinking	2	Early:	
B. Psychological and Attitudinal		Unexplained changes in family, social, and business relationships; complaints about wife, job, and friends	3
1. Direct effects		Spouse makes complaints about drinking behavior, reported by patient or spouse	2
Early:		Major family disruptions: separation, divorce, threats of divorce	3
When talking freely, makes frequent reference to drinking alcohol, people being "bombed," "stoned," etc., or admits drinking more than peer group	2	Job loss (due to increasing interpersonal difficulties), frequent job changes, financial difficulties	3
Middle:		Late:	
Drinking to relieve anger, insomnia, fatigue, depression, social discomfort	2	Overt expression of more regressive defense mechanisms; denial, projection, etc.	3
Late:		Resentment, jealousy, paranoid attitudes	3
Psychological symptoms consistent with permanent organic brain syndrome (see also Major Criteria, Track I, B)	2	Symptoms of depression: isolation, crying, suicidal preoccupation	3
		Feelings that he is "losing his mind"	2

They did not see his drinking . . .  
Or perhaps they did not care.  
He tried to hide his problems . . .  
They were much too painful to share.  
  
And now, he has to drink again . . .  
To hide his depression and blues.  
He puts every dime he has in a bottle . . .  
He just sold his last pair of shoes!  
  
But perhaps a few years ago . . .  
He might have listened, I think.  
To someone who really understood . . .  
Why he often needed a drink.  
  
It takes a certain kindness . . .  
To share a problem or two.  
And say the well-known magic words . . .  
"You are my friend . . . may I help you?"

References

1. Schuckit, Marc A.: The disease alcoholism. *Postgrad. Med.* 64(6):78-84, 1978.  
2. Packard, Russell C.: The neurologic complications of alcoholism. *Fam. Physician* 14(3):78-84, 1976.  
3. Beeson, Paul B.; McDermott, Walsh and Wyngaarden, James B.: *Cecil Textbook of Medicine*, Ed. 15. Philadelphia, New York, Toronto, W. B. Saunders Co., 1979.

4. Carlen, Peter L. *et al.*: Reversible cerebral atrophy in recently abstinent chronic alcoholics measured by computed tomography scans. *Science* 200(4345):1076-1078, 1978.  
5. Wiederholt, W. C. *et al.*: Central pontine myelinolysis. *Arch. Neurol.* 34:220-223, 1977.  
6. Huey, Leighton Y.: Psychiatric problems of alcoholics. *Postgrad. Med.* 64(6):123-128, 1978.  
7. Ettinger, Philip O. *et al.*: Arrhythmia and the holiday heart: Alcohol associated cardiac rhythm disorders. *Am. Heart J.* 95:555-567, 1978.  
8. Erb, Lynn and Andresen, Brian D.: The fetal alcohol syndrome. *Clin. Pediatr.* 17:644-649, 1978.  
9. Rosett, Henry L. *et al.*: Therapy of heavy drinking during pregnancy. *Obstet. Gynecol.* 51:41-45, 1978.  
10. Podratz, Karl C.: Alcoholic ketoacidosis in pregnancy. *Obstet. Gynecol.* 52(suppl):54s-57s, 1978.  
11. Schiff, Leon: *Diseases of the Liver*, 4th Ed.: Philadelphia, New York, J. B. Lippincott Company, 1975.  
12. Anon.: Criteria for diagnosis of alcoholism. *Am. J. Psychiatry* 129:127-135, 1972.

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# Physician Impairment

## *Some Criteria for Prevention*

JOHN-HENRY PFIFFERLING, Ph.D.;\* JEFFREY C. BLUM, M.D.\* and  
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*Ed. note:* As a matter of general policy, the *Journal* does not publish articles that have been previously published elsewhere. The nature of this issue and the character of the following paper prompt us to depart from this policy in this case because, in addressing the prevention of physician impairment, it provides an excellent review of the basic features of the problem as it outlines specific recommendations for prevention, and we present it with the permission of the authors and *The Journal of the Florida Medical Association* in which it first appeared.

PREVENTION of physician impairment requires concerted efforts from every sector of the medical profession and the general public. Physicians, medical students, and family members must be instructed on the conflicts inherent in the practice of medicine within the United States medical care system.

The often unrealistic expectations brought to the role of the physician by patients, practitioners, medical educators, and other health workers must be openly confronted so as to reduce the overburden so commonly felt by physicians and trainees. Conflicts and inconsistencies abound in each area of physician development: premedical, medical, and continuing education.

At the premedical level, students are often poorly prepared for the variety of professional work options available in the health arena. They are not adequately informed of the risks associated with the physician role and status, and are often limited in exposure to clinical experiences.

At the formal education level medical students are confronted with a shortage of time for learning a vast number of facts, insufficient role model types and feedback, unclear objectives for professional responsibility, incongruent evaluation and curricular activities, and major conflicts between time for self and time for the profession. The medical student has little time and guidance to develop a sense of him/herself as a professional person with an ability to

accept areas of failure, and with rewarding personal life that extends beyond the practice arena.

Following the completion of formal education, the physician must deal with the conflicts of practice and/or academic roles that serve as sources of professional strain. Physicians may have inadequate resources within which to perform their work; limited objective feedback on their professional performance; inadequate client gratitude and feedback; segmented and incomplete relationships with patients; perceived work environment infringement on professional decision-making and autonomy; numerous routine tasks; a lack of collegiality; and a personal confrontation with failed expectations. These multiple factors play single or additive roles in developing emotional and physical stresses upon the physician, producing limited or marked impairment upon professional and personal life. Awareness of these sources of strain and anticipatory guidance to deal with their emotional toll helps to prevent physician impairment.

### **Definition, Natural History, Prevention**

Physician impairment is a generic concept in which personal problems interfere with the reasonable performance of medical activities including a continued ability to maintain currency in medical content and a personal capacity to contribute to health promotion through interpersonal skills. Physicians are highly susceptible to the development of overt symptoms such as chemical or alcohol dependency. This usually develops in a progressive manner. In a recent review, Talbott and Benson found that 12-14 per cent of physicians have had, currently have or, in their opinion, will have problems with alcohol or drugs.<sup>1</sup> The incidence and prevalence of other impairing conditions — such as psychiatric or emotional problems — is thought to be high, but the epidemiologic data is inadequate to define the extent of the problem.<sup>2</sup>

Clues to physician impairment are found in both the preclinical and clinical settings (symptoms may be marked and severe or may be subclinical). Medical students may be regularly using mind-altering

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substances or indulge in episodes of excess use to gain added energy, to relax, or for relief of stress. Residents may indulge in consistent use of mind-altering substances, repeatedly make errors in cases requiring routine clinical judgments, avoid experiences that are relevant to their stated practice specialty, and make apparently illogical changes of training paths. Both young and more mature physicians may self-prescribe and use drugs; alienate themselves from family, community, and colleagues; display marked changes in office, hospital practices, or duties; and demonstrate deteriorating physical or personal care. Talbott and Benson review in detail these characteristics of behavior.<sup>1</sup>

It appears that the probable history of impairment includes a vulnerable individual selected by the usual medical school admission process; an educational environment that precludes allowing the student to deal with the emotional toll associated with achieving medical professional status and responsibility; a societal role strain that demands unrealistic behavior; and a professional society that disallows open discussion of physician role stresses — particularly the needs of the physician as a person. As the American way of life decreases support from continuity of community, family and work, greater stresses are added.

Preventive efforts must be extended back through residency, medical school, and even premedical training, and supported by leaders in the relevant professional environments. In addition, other important adjunctive areas of intervention include the family of the physician, co-workers, and patients. Family members play a vital role in prevention, early recognition, and confrontation. Co-workers must learn to recognize early clues to impairment and have knowledge of supportive strategies to prevent lowered physician morale. Patients must be educated to the mass of competing influences in the modern medical setting that may interfere with a quality doctor-patient relationship. New contracting relationships providing realistic expectations between doctor and patient can help establish more efficient allocation of health responsibilities.

### Premedical Education

*The Problem:* Our current premedical education and advising system prepares its students poorly for the variety of options available as a medical care provider; inadequately prepares premedical students for the risks and conflicts associated with being a doctor; and gives limited or no exposure to a broad variety of clinical, field experiences. Premedical

training can prepare students for the realities of medical training and practice, help students to better self-select medical or non-medical careers, and begin anticipatory training for the emotional and intellectual toll inherent in being a doctor.

*Suggested Interventions:* Premedical programs should allow the student academic credit for field experiences in a variety of medical settings. Students in these programs should be exposed to the failures, frustrations, uncertainties, and successes associated with medical practice. Debriefing experiences after field projects are important opportunities for self-reflection and career planning. Ideally these debriefings can be conducted by both practitioners and advisors skilled in career counseling.

Opportunities that allow the premedical student to understand the enormous amount of routine in medicine can be helpful in preparing them for the reality of the physician role. An encounter with a recovered “impaired” physician can be useful in preparing them for some of the risks associated with trying to practice perfectionistic medicine. They can also be prepared for their own feelings when in the patient role.

Premedical advisors need to be better prepared as career counselors for future medical and health care practitioners. They need thorough exposure to the conflicts and frustrations that lead to the problems of burnout and impairment. They and their students can read biographical sketches about the difficulties in being a doctor, and plan exercises that reinforce coping behavior for stress situations.

Premedical students can be better prepared for understanding the roles, attitudes, and views of health care workers in order to better communicate as physicians with nurses, hospital administrators, patient advocates, etc. Insight into the meaning of the illness situation to the patient and to the provider can also be gained from systematic exposure to materials and exercises on the patient role. Courses on the anthropology of medicine, medical sociology, medicolegal values, and ethics can offer students insight into the complexity of the modern medical world in advance of their immersion into medical training.

The practicing health professional and trainee can be a powerful resource in realistically preparing the premedical student for a potential career in the medical arena. Simultaneously, young pre-professionals can nonthreateningly enter the practice setting and consciously seek the asset areas of the professional role — reflecting these benefits to the busy professional, thereby countering the problem-oriented view of the practitioner.



## Medical Education

*The Problem:* Limited time is available for the medical student to reflect on individual professionalization — a process with important benefits and risks. Rigorous schedules demanding highly factual education often leads to a transformation from altruistic, conscientious attitudes to cynicism and myopic attitudes that threaten professional pride. The medical student has little time and guidance to develop a sense of him/herself as a professional person with a working attitude toward failure and with a rewarding personal life that extends beyond the practice arena. Medical students are forced into a ritual of self-sacrifice, perseverance, competitiveness, and denial of universal psychological needs. The physician's work role, commonly including ritual dependence and deference, is internalized as the growing personality of the medical student.

*Suggested Interventions:* Medical school and housestaff programs that attempt to reduce the stresses of medical training have found the following actual or suggested interventions.

Medical students need workshops on coping with medical school stressors such as loneliness and isolation, examination anxiety, fear of incompetency, changing self-concept, dependency feelings, problems with relationships, workload, dealing with sexuality, lack of role models and social, sleep, and sexual deprivation. Many coping and stress reduction skills are now well-known by counseling professionals, but not systematically taught and verified as skills for medical trainees.

Experiential workshops on centering skills with opportunities to develop self-respect and self-affirmation are crucial for the medical trainee in an environment that stresses individualistic problem-solving.

Medical trainees need experiential exposure and reinforcement in acquiring social support, stress reduction skills, life planning tools, confrontation techniques, negotiation strategies, and peer counseling skills. Each of these areas of conflict management are useful both for trainee survival and as patient education strategies. Physicians must function in many non-medical model capacities and these interpersonal skills, if reinforced by role models, can contribute to preparing efficient, conscientious clinicians. Medical educators must incorporate into the curriculum opportunities for their trainees to gain coping skills, as so many of the modern clinician's demands are in human relations problems that are not amenable to purely medical solutions.

Access to child-care services, financial manage-

ment advisors, time management skills, and participation in a personal health care plan reduce aggravating stressors in the trainee role that deplete the student's available learning energy. Subsequent use of these skills reduces the impact of common practice problems such as budgeting time and coping with practice management demands.

Medical students and housestaff need exposure to "recovery" models, such as recovered alcoholics, to balance the domination of exposure to failure (non-cure) in the tertiary care population. Exposure to "recovered" populations also transmits revitalizing energy needed in coping with the inevitable failures associated with tertiary care patients.

Medical students must be exposed to their colleagues as patients so that they can be better prepared to be a patient themselves and to care for their physician patients. Exposure to recovered "impaired" physicians as teachers can prepare the student for coping with his/her own worst fear — being helpless or becoming impaired. Recovered physicians demonstrate for the medical student the creative use of illness and enhance the acquisition of hope models. A rotation with a physician advocacy group, such as a state medical society committee on disabled physicians, can prevent impairment by modeling fraternal caring and reducing the negative energy associated with the town-gown problem.

*Table I* lists many coping activities valuable in prevention. Several of these are further discussed in *Beyond Survival*,<sup>3</sup> and many examples are offered in our new book, *Coping in Medical School*. In addition, housestaff programs would benefit from two special coping activities: the availability of unstigmatized, part-time residency programs; and ready access to counselors with life planning and career planning skills for physicians. A list of preventive strategies for housestaff is offered in *Table II*.

At present, the overwhelming evidence from studies of housestaff indicate that they are too fatigued from work to maintain their caring skills for both their patients and themselves. The many loyalties and obligations of the housestaff role and service setting offer many frustrations for the resident, and guidance is badly needed so that career planning is carefully addressed rather than allowing it to become a spinoff to the treadmill existence of the resident role. Career planning counselors could also function as true resident advocates, allowing the residents some needed freedom for career decision-making.

Housestaff also confront conflicts between personal identity and career identity, competition between time for self and family, and a personal defini-



TABLE I PREVENTIVE OPTIONS FOR MEDICAL STUDENTS
Workshops on Coping with Medical School Stress: Centering exercises Social support Stress reduction Life planning Student/faculty/administration problem-solving groups Confrontation skills Interpersonal skills Negotiation and conflict resolution Practice management Participation in retreats Access to support groups run by other health workers Proximal child care services Flexible graduation plan Prepaid personal health care plan Recovery and rehabilitation rotations Clerkship with Impaired Physician's Committee Counseling Group therapy Recovered physician lectures Courses in marital health

TABLE II ACTIVITIES THAT REDUCE MEDICAL STUDENT HOUSESTAFF STRESS
Participation in support groups Option of part-time residency medical school years Career planning counseling Psychological counseling Proximal child-care services Financial and time management advisors Organizational conflict seminars Personal and professional medical development seminars Interpersonal communications skill sessions Negotiation skills Paid sick-leave policies Inter-generational social activities (Ex. medical society/ training programs) Family orientation programs

tion of professional responsibility. As members of recently initiated families they also feel the pull of spouse and parenting pressures. Too often the training model is too rigid to allow a reduced work schedule as an acceptable option. The availability of the option of a flexible residency program is an important component in a preventive program.

Continuing Medical Education

*The Problem:* Physicians, as all other professionals, suffer from a crisis of morale symptomatically demonstrated as burnout. Awareness of the sources of burnout and anticipatory guidance to deal with the emotional toll helps to reduce or prevent physician impairment. Some of the sources for these crises are a loss of the expected energy derived from a therapeutic doctor-patient relationship because of the encumbrances associated with administrative, legalistic, technical, and societal obligations;<sup>4</sup> inadequate resources with which to perform work; inadequate client gratitude and feedback; incomplete relationships with patients; perceived bureaucratic infringement on physician autonomy; job routine; lack of collegiality; and confrontation with failed expectations.

*Suggested Interventions:* Awareness of the conflicts and morale reducing activities of the medical role suggests that physicians must be aware of their changing career goals and modified aspirations. Their goals and their practices go through a develop-

mental cycle. Five-year CME plans and assessments should be incorporated into the preventive care plan of a conscientious practitioner. Feedback from the practice or academic setting should be routinely available and, where educational or interpersonal skills are deficient, a plan developed for correction. If the practitioner is depressingly frustrated by the routine of the practice, an aspect of the CME plan can be oriented toward redirection or retraining. In the academic setting, the physician may be unstimulated by a primarily research or teaching bent and wish to redirect his/her energies into some alternative activity. Imaginative practice/academic combinations need to be developed to reflect the physician's interests at that moment. Most current medical roles are far too rigid to satisfy the diversity of personal and professional styles that physicians bring to their work role. The creative strengths of the physician are rarely openly discussed in employment interviews or designed into the contract of the academician. If physicians fail to affirm their strengths as they negotiate a position, burnout potential is increased. At the very least, one should go into the practice environment expecting to regularly evaluate professional and personal values, and ideally, spend some time designing an input system for continuing professional education and career goal planning.

Organized medicine must address practice stressors so the individual physician does not continue to feel as if he or she is the only one with a problem. A useful start has been made with the American Academy of Family Physician's regionalized workshops on *Coping with Practice Stressors*. We have led many groups of physicians in problem-solving

exercises designed to identify recurrent practice/work stressors, cope with them by peer counseling, and experience the benefits of a supportive environment. We have also found that "anthropological" visits devoted to shadowing the physician for a day and analyzing the practice stressors in a day devoted to caring for the physician are a useful intervention. When physicians leave their practice setting and spend a day with another physician in a distant community — devoted to dealing with practice stressors — both parties benefit from a novel experience.

Physicians can also take steps to enhance their own well-being by life style changes and by clarifying their own professional goals and values. For example, many recurrent stressors in a practice result from unclear communications about expected services, roles, or responsibilities. The formulation of a set of Principles of Practice sets down what is expected that the practice will accomplish and how to accomplish the goals. Without a Principles of Practice document, one virtually guarantees miscommunication between partners, other health workers, and patients. The Principles of Practice document assists in recruiting new physicians to a group or helps one as a candidate decide whether one wishes to join an "unorganized" group. A Principles of Practice statement could contain the practice group's approach to patient care, quality control, patient education, privileged communications, continuing medical education, fees, etc. Without documentation of these objectives, the practice controls the physician rather than the obverse. Where philosophy and practice approach are clear, and goals are specific, one can audit actual performance and design appropriate interventions.

A clear Principles of Practice document reduces conflict over delegation of responsibilities, overburden caused by patient demands, and a host of recurrent practice stressors. The more carefully and clearly defined are the Principles of Practice, the greater the congruence between the expectations of oneself and one's partners, other health workers, and patients. Recruitment of physicians with similar values is ensured and retention of both providers and patients with shared goals is fostered. A high quality communication system is also structured into the practice world. Partnership divorce may also be prevented or reduced in emotional toll in practices with Principles clearly formulated. *Tables III and IV* offer two examples of physician-generated Principles of Practice. We suggest that these two documents be reviewed for ideas and principles relevant to each physician's professional practice personality. Writing one's own document is an affirmative effort that

TABLE III  
PRINCIPLES OF PRACTICE\*

Accuracy and thoroughness should never be sacrificed for speed or technologist's convenience.

The patient's clinical history is important and should be provided.

There should be a favorable attitude and atmosphere for communicating with clinicians.

The working environment should be pleasant both physically and emotionally.

My colleagues should provide high quality patient care and maintain professional excellence.

There should be a favorable attitude toward sharing knowledge and skills, and a willingness to discuss difficult cases as well as share interesting ones.

There should be respect for my individualism and a tolerance of different ideas and ways of doing things.

Frequent opportunities should be provided to communicate with my colleagues ideas and thoughts regarding our practice. I wish to be treated as an equal and included in decision-making processes from the beginning.

A personal and professional commitment should be made to help me succeed in our practice and in the medical community.

Frequent evaluation including constructive criticism and positive feedback is important especially during the first year of practice.

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supports individual well-being and prevents miscommunication.

We also recommend participation in a support network that allows regular opportunities to self-disclose practice-related stressors in an unqualified, supportive environment. Too few physicians have the needed support available from participation in a support group whose primary aim is to give nonjudgmental support. Participation in a support group protects one from feelings of intense loneliness and letting one's own internal critics reduce self-esteem. Group members cannot only replenish one's need for nurturance, but they can offer their coping behaviors as ways of reducing personal stress. They are not therapy groups, are leaderless, composed of peers, and do not require a professional therapist. They do require genuineness, empathy, and peer concern. For physicians, participation requires some risk taking in disclosing personal needs, an area that is poorly rewarded in the professional medical culture. One must also guard against letting the group become an outlet for hostility and contagious morbidity. This can be done by remembering that the group is primarily oriented to sharing of support and positive regard.

Physicians can also benefit from attending much



more carefully to their own personal life style and their management of stress and skills at relaxation. Courses in stress management, time allocation, conflict management, and life planning are needed for modern physicians. The multiple roles required in the physician role, and a rigid training model that does not address the issues associated with the social, economic, legal, and valutive life of a practice, predispose the conscientious physician to professional burnout.

Physicians must balance the rewards and frustrations of the medical life with success in other sectors of life. In workshops on burnout, we are always on the lookout for individuals who invest their entire self-esteem in their professional role. These individuals often are poorly prepared to deal with the inevitable failed expectations in medical practice. Training skills in disidentification — a particularly useful coping skill in which one attempts to disidentify ego from a momentary feeling — seems to be a useful tool for these individuals.

Conclusion

The prevention of physician impairment with the simultaneous enhancement of well-being is not only necessary, but crucial if we are to reduce professionally and personally crippling disquietude, burnout, and impairment among physicians. Impaired physicians use defensive denial to discount their

disability and commonly fail to reach for help when they are troubled. Efforts to reduce the problem of impairment must, therefore, be well-supported and well-funded. Professional and non-professional organizations and individuals must cooperate in raising the consciousness level about the prevalence of impairment, and publicize the resources available for support.

The costs of physician impairment are socially, economically, and professionally staggering. Rehabilitation is costly, lengthy and extremely difficult, although major gains have been made in the last few years with aggressive intervention programs. But these few successful programs are well-funded, led by committed physicians, and supported by a combined effort including medical societies, auxiliaries, state medical boards, and other professional groups.

The prevention of physician impairment should be a high priority in allocating resources in the medical arena; currently it is rudimentary. Continued support is needed to bolster the work of the Department of Mental Health of the American Medical Association, its associated state medical society committees, the Committee on Mental Health of the American Academy of Family Practice, the Committee on Physician Impairment of the American Psychiatric Association, and independent organizations committed to prevention.

TABLE IV  
PRINCIPLES OF PRACTICE\*

<div><div>● General Statement</div><div>The practice should provide comprehensive care for individuals and families. It should emphasize wellness, health promotion, and self-care in a setting that nurtures the health and well-being of both clients and staff.</div></div> <div><div>● Basic Elements of Care</div><div><div><div>Comprehensiveness: The practice should be able to handle most of the primary care needs of its clients, irrespective of state of health or specific pathology. Where necessary, the practice may recommend referral to or consultation with other health specialists, but will maintain contact with and advocacy for the client.</div><div>Integration: At all times, the well-being of the client will be paramount. The practice shall not consider itself limited to "orothodox" medicine when alternative approaches appear valid and helpful. At all times the practice will</div></div></div></div>	<div>endeavor to fully inform the client of all decision points and will attempt to provide the necessary background information to assist the client in being an active part of the decision-making process.</div> <div><div>Family Medicine: While not being limited to the treatment of family units, the practice, recognizing the central importance of the family in many individuals' lives, will endeavor to include the entire family in diagnostic, therapeutic, counseling, and lifestyle interventions. Additionally, the practice will attempt to provide services appropriate to the entire life-cycle of the family, including prenatal, obstetric, pediatric, adolescent, young adult, middle-aged, and older adults in both illness and health.</div><div>Wellness: Of key importance in the practice philosophy will be the concept of wellness. The following diagram will help to define wellness.</div></div>
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WELLNESS

Health

worried well

risk factors

symptomatic illness

serious illness

Death

TABLE IV (Continued)

Aspects of wellness include:

- Viewing illness as an opportunity for a creative review of one's life — as a potential growth process.
- Movement along a wellness continuum is mainly an active process requiring the full, knowledgeable participation of the individual.

**Health Promotion:** The practice will incorporate into its services such capabilities as providing health hazard appraisals and patient education directed toward the elimination of recognized risk factors and the promotion of an appropriate knowledge base and health attitude or approach. The basic belief of the practice is that the most important aspect of health care must be the promotion of health and the primary prevention of disease.

**Self-Care:** The practice holds that each individual is capable of providing a significant proportion of his or her own health care and wellness needs. The practice will attempt to provide educational materials, courses, and assistance to clients to better prepare them to engage in active and high quality self-care. Where possible, the practice will make available self-diagnostic tools and self-care treatment protocols at low cost to clients. Guidelines will be developed to assist clients in the appropriate use of professional services. Each visit to the practice will be seen as an opportunity for on-going self-care patient education. A variety of educational tools will be employed including videotapes, classes, printed self-instructional materials, computerized self-instructional programs, and an extensive library. Part of the health care plan developed for each client will be a specific wellness education program.

● **Practice Organization**

**Setting:** The practice will be located in a physical setting that will be at once healing and functional. Efforts will be expended to provide comfortable and pleasant waiting areas with considerable access to natural lighting, natural views, and a sound environment designed to induce feelings of relaxation and comfort. Rooms will be designed into the setting to allow for the expected variety of practice activities, including meditation, exercise, massage, and group activities. Ideally, the practice will be situated in a place allowing for clean air, natural undisturbed woodlands, and room for walking and jogging in harmonious surroundings. Additional considerations such as negative ion generators, full spectrum lighting (where natural light is not appropriate or available), and silent areas will be included.

**Well-Being of Staff:** Recognizing the importance of the well-being of staff members to the provision of high quality health care, considerable emphasis will be placed on providing an environment for the practice staff that promotes health and personal growth. The practice should provide for levels of responsibility compatible with healthy lifestyles, opportunities for continuing education, and adequate free time to pursue interests outside of the practice. Recognizing the

problems inherent in this, a practice manager will assist the practice staff to develop the optimal scheduling.

**Staff:** The staff should be composed of a mix of health care personnel, and may include physicians, nurses, nurse practitioners, physician's assistants, counselors, health educators, and others as needed to provide optimal care. In order to facilitate the development of a group spirit and commitment among the center staff, daily opportunities for sharing feelings, knowledge, skills, and patient care problems will be designed into the practice schedule. Wellness and health enhancement programs for the staff will also be an intrinsic part of the practice. A director will be elected by the staff to help to coordinate staff activities. Most decisions affecting the staff will be decided by consensus.

**Computerization:** A computer system will be designed into the center to assist with record keeping and data base development. This system will also run Health Hazard Appraisals, constitute an information retrieval system for practitioners, be employed in audits, and will aid in generation of new knowledge through on-going studies of the effectiveness of health care practices used by the practice.

● **Additional Principles**

**Holism:** The practice will attempt to view each individual in an holistic framework — that is, as composed of a unique and complex interaction of mind, body, spirit, and emotions. Illness will be seen, in this context, as a disturbance within the dynamic balance between these aspects of the individual. The state of health will be defined as the degree of balance, and wellness will be seen as the growth of the gestalt of the whole person.

**Psychosomatic Medicine:** Just as the practice recognizes the holistic nature of each person, so will all states of health and illness be seen as involving psychosomatic elements. Therefore, all intervention must include consideration of the whole individual including: Etiology of the disease, place in the life-cycle, social milieu, and the individual's own value system.

**Orthodox Medicine:** The practice will consider it of special importance to seek non-invasive, potentially less harmful alternatives in any diagnostic or therapeutic situation, yet recognizes the value and efficacy of much of orthodox medical and surgical technique.

**Research:** Research into new approaches to patient care, education, motivation, wellness, and experimental therapies will be included in the practice's services where possible. All of the practice staff will be encouraged to participate in such projects.

**Spirituality:** Recognizing that spirituality and spiritual values are important aspects of the human experience, the concept of spiritual health and well-being will be an integral part of the practice. All expressions of religious belief will be accepted and fostered, and the individual encouraged to use his or her spiritual community as a source of support.

\* Stephen Leighton, M.D. (Second draft, 9/23/81).





## Current COMMENT

H. B. LINDSLEY, M.D., *Editor*

### *Acute Renal Failure: Clinical Course and Management*

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#### **Introduction**

ACUTE RENAL failure is a frequent and serious medical problem which occurs in a wide variety of clinical settings. Acute renal failure does occur by itself as a consequence of primary renal disease, ischemic or toxic renal damage; it also results from pre- and post-renal conditions. In addition, it may be seen as a complicating event with almost any serious medical illness or surgery. The following is a description of the clinical course, diagnostic features, major metabolic complications, and current treatment.

#### **Intrinsic Acute Renal Failure**

The clinical course of acute renal failure after an ischemic or nephrotoxic event can be separated into several distinct phases: oliguria or anuria at the outset, followed by a diuresis, and finally either complete or partial recovery of renal function.

*Initial Phase:* The initial phase of acute renal failure is of variable length and may last up to several months. It is characterized by a decrease of renal function with variable urine flow rates. Urine volume will not necessarily be decreased during the early period, and in this instance the physician and patient may not be immediately aware of impending renal problems. At the other extreme, a number of patients may be anuric during this initial phase. However, the majority of patients will have oliguria with urine volumes of less than 400 ml/day. This daily volume of urine is not adequate to excrete the

normal amount of metabolic waste material, and waste products accumulate. At the same time the specific gravity and osmolality of the urine are generally decreased (usually about 1.010 and 300 mOsm/l) indicating the kidney's inability to concentrate the urine. There is also significant impairment in tubular function which results in a high urinary sodium concentration, frequently more than 20-40 mEq/l. The duration of this oliguric phase is quite variable. In some patients oliguria may be of such short duration that it goes unrecognized. In a small percentage of patients, increases in urinary volumes do not occur and the patients develop chronic renal insufficiency. The majority of patients develop an increase in urine volumes toward normal and recover renal function in two to three weeks. Recent studies have documented the existence of a nonoliguric or polyuric form of acute renal failure. Here the measured glomerular filtration rate is markedly decreased in the presence of large daily urine volumes. This form of renal failure occurs more frequently as a result of drugs or nephrotoxins. There are several possible explanations for this polyuric type of acute renal failure. First, there is severe reduction in tubular function with decreased reabsorptive capacity in some nephrons in the presence of normal blood flow and glomerular filtration rate. Second, there is a generalized but moderate reduction in filtration associated with decreased reabsorptive capacity in all nephrons. Third, there are alterations in medullary interstitial tonicity. Further studies are needed to clarify the role of these possible mechanisms which may be involved in polyuric acute renal failure.

*Diuretic Phase:* Diuresis may begin gradually or suddenly following an initial period of oliguria of

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variable duration. Urine osmolality remains low, because clearance of urea and other retained metabolic compounds lags behind clearance of salt and water. In spite of large urinary volumes, patients may still continue to develop uremic symptoms which require supportive therapy. If salt and water losses are not carefully monitored and corrected promptly during this phase, the condition of the patient may deteriorate further as a consequence of volume depletion (prerenal component). Use of dialysis during the initial phase may obscure the diuretic phase. This is largely due to the fact that proper dialytic therapy maintains solute and volume balance and obviates the need for a large initial diuresis.

**Functional Recovery Phase:** The diuretic phase may last from several days to weeks. Eventually diuresis is accompanied by gradual improvement in functional parameters (glomerular filtration rate, ability to handle salt and acid load and urine concentrating ability). The course of renal functional improvement may vary considerably from patient to patient. Hypercatabolic patients tend to recover more slowly. Clinical recovery is usually complete although a small percentage of patients may retain residual impairment of renal function. Most commonly the residual abnormality in renal function is a defect in the kidney's ability to concentrate the urine maximally.

## Diagnosis

Acute renal failure is typically recognized when oliguria or anuria occurs. However, as discussed previously, acute renal failure may occur in the presence of normal or even increased daily urine volumes. Early recognition in this setting relies on a high degree of clinical suspicion. Unfortunately, there are no definitive clinical signs found in association with acute renal failure. Thus early diagnosis of acute renal failure rests further on the prompt and frequent evaluation of laboratory data. *Table I* lists the most important tests and typical results needed for recognition and differentiation of acute renal failure.

The next important step in the diagnostic evaluation is to define the extent of the acute process and consider the possibility of underlying chronic disease. Here careful review of history and charts provides important clues. Similarly, the presence of systemic medical illness (*i.e.* diabetes mellitus, hypertension) may indicate a chronic element. On the other hand, no time should be lost in identification and elimination of reversible factors. The possibility of infection, volume depletion, and lower urinary tract obstruction should always be considered. Infection is one of the leading causes of death in patients with established acute renal failure. Every conceivable effort should be undertaken to mini-

TABLE I  
DIAGNOSTIC TESTS HELPFUL IN THE DIFFERENTIATION OF ACUTE RENAL FAILURE

Test	Prerenal	Intrarenal	Postrenal
Urine volume	<500 ml/24 hrs	Variable, generally <500 ml/24 hrs	Variable
Urine sodium concentration	<20 mEq/L	>40 mEq/L	Variable
Urine osmolality	Elevated	Isoosmotic to plasma	Variable
Serum BUN-creatinine ratio	Elevated	Normal	Variable
Urine to plasma creatinine ratio	>14	>14	Variable
Fractional excretion of sodium FeNa $\frac{(U/P) \text{ Na}}{(U/P) \text{ Cr}} \times 100$	<1%	<1%	Variable
Ultrasound	Normal size	Normal size	Evidence of obstruction
<sup>99m</sup> Tc Technetium and <sup>131</sup> I Hippuran Studies	Normal	Abnormal	Evidence of obstruction



mize risk of infection. This must include proper management, replacement, and earliest removal of all indwelling catheters, tubes, and venous or arterial lines. Laboratory tests, scans, and sonograms should be used aggressively. In addition, evaluation must include microscopic urine analysis. For example, in the presence of glomerulonephritis, the urinary sediment will contain red cells, red casts, and fat bodies; in acute renal failure due to ischemia or nephrotoxins, the sediment may merely show cellular debris.

### Metabolic Complications and Therapeutic Considerations

Prevention of acute renal failure is certainly the most effective way to avoid consequences related to this syndrome. Such prevention entails proper avoidance of unnecessary nephrotoxic drugs, including radiographic contrast agents, and adequate fluid management in postoperative patients. However, prevention is not always possible in clinical situations. The following discussion of the major metabolic consequences of acute renal failure and certain therapeutic guidelines is helpful in the management of these patients.

*Disturbance of Extracellular Fluid Volume:* There is little or no renal excretion of salt and water during the oliguric phase of acute renal failure. Intake of fluids and sodium should therefore be rigidly controlled to prevent undue expansion of the extracellular fluid space. A daily fluid intake of 400 ml should be provided in addition to replacement of measured volume losses. These include urine, gastrointestinal fluids, drainage from various sources, and extensive sweating. Daily recording of the body weight and charting of fluid intake and output is absolutely essential. If the patient is properly managed without dialysis, a weight loss of .25 to .50 kg/day during the oliguric phase is not unusual. Excess gain in body weight and increase in blood pressure are good indicators of expansion of the extracellular fluid space. Serum sodium concentrations usually remain close to normal if sodium intake is maintained between 40-60 mEq/day provided water intake is also balanced as discussed above. Any initially existing volume deficit should be replaced promptly in an effort to remove or diminish a prerenal component.

*Metabolic Acidosis:* Metabolic acidosis is a consistent feature. It occurs due to the retention of strong mineral acids normally cleared by the kidney. Usually the acidosis is not severe but should be treated nonetheless with appropriate amounts of

sodium bicarbonate. Great caution must be exercised in the use of sodium bicarbonate as injudicious usage results both in extracellular volume expansion and in increased sodium concentration in the blood. Most patients will tolerate blood pH in the range of 7.2-7.3 with a serum bicarbonate of equal to or slightly greater than 15 mEq/l. Therapy should be considered when serum bicarbonate is between 15 and 18 mEq/l and should be more aggressive when blood pH is less than 7.2 or serum bicarbonate is less than 15 mEq/l.

*Azotemia:* During the initial phase a progressive daily increase in serum creatinine (0.5-2.0 mg/100 ml/day) and blood urea nitrogen (10-20 mg/100 ml/day) is seen. When the serum creatinine concentration rises to around 10 mg/100 ml, plans should be made to begin dialysis therapy. Early dialysis therapy allows a liberal diet and fluid management and seems to decrease mortality and morbidity. Type and frequency of dialysis are usually determined by the availability of facilities as well as the clinical course of the patient. In the absence of dialysis, dietary management and protein restriction are more difficult. A sufficient supply of carbohydrate (more than 35 Kcal/kg/day) will decrease protein catabolism. In addition, a restricted protein intake of high biological value of 0.3 gm/kg/day is recommended in nondialyzed patients. Infusion of hypertonic glucose (10%) and essential L amino acid solutions has been reported to cause considerable improvement in clinical condition as well as survival rate. This therapy should be used with caution since abnormalities in glucose, amino acids, fatty acids, calcium, and phosphorous metabolism have been described in a few patients.

*Hyperkalemia:* Hyperkalemia is a life threatening complication of acute renal failure. Although there is no clear correlation between the degree of hyperkalemia and electrocardiographic changes, monitoring of the EKG is the best means of detecting arrhythmia at an early stage. Common EKG abnormalities associated with hyperkalemia include prolonged QRS, absent P waves, and tall T waves. Hyperkalemia should be treated promptly if it is severe or has already given rise to cardiac dysrhythmias. Several modes of therapy may be used for treatment. Initial management should consist of intravenous infusion of 10-20 ml of ten per cent calcium gluconate during a period of two to five minutes. If the patient is acidotic, administration of sodium bicarbonate will effectively reduce the serum potassium concentration by promoting the entry of potassium into the cells. Similarly infusion of 250-500 ml of ten per cent glucose containing one



unit of insulin for each 3-4 gm glucose will also correct hyperkalemia.

Additional measures are necessary to reduce the body burden of potassium either via the gastrointestinal tract or by dialysis. Removal of potassium via the gastrointestinal tract can be achieved by using cation exchange resins such as sodium polystyrene sulfonate (Kayexalate), given as an oral dose of 20 gm with 70 per cent sorbitol added to induce either diarrhea or soft bowel movements. Kayexalate may also be given as a retention enema. Note that removal of total body potassium by cation exchange in the gut is a slow process (1mEqK/gm Kayexalate). Sodium overload can also occur because potassium exchanges mEq/mEq with sodium in the GI tract. On the other hand, hemodialysis effectively removes large quantities of potassium quickly (*i.e.*, 40-60 mEq/hr) without the preceding concerns about sodium and fluid overload. Dialytic correction of acidosis will further promote cell entry of potassium. Peritoneal dialysis is much slower in removing potassium.

**Hyperphosphatemia – Hypo- and Hypercalcemia:** Serum phosphorous concentrations rise within a few days of the onset of acute renal failure with a concurrent decrease in the serum concentration of calcium. This calcium decrease will in turn result in an increased parathyroid hormone secretion and decreased rate of synthesis of 1,25 dihydroxycholecalciferol, the active form of vitamin D. However, hypocalcemia in acute renal failure is rarely symptomatic. Some physicians advocate control of hyperphosphatemia hoping to prevent hypocalcemia and increase parathyroid hormone secretion. Phosphate binding antacids which contain aluminum hydroxide are recommended to control elevated serum phosphorous concentration (5.0 mg/100 ml or more). In patients with acute renal failure due to rhabdomyolysis, hypercalcemia may actually occur during the recovery phase and is thought to be due to mobilization of calcium from damaged muscles.

**Hyperuricemia:** Striking elevations may occur in the serum concentration of uric acid (15-20 mg/100 ml). In the common case of acute renal failure from ischemic and nephrotoxic injury, the retention of urate is due to decreased filtration and failure of normal urate secretion in the tubules. Moreover, concentrations may increase in markedly catabolic patients due to increased urate synthesis. This hyperuricemia does not ordinarily require therapy with allopurinol since acute gouty arthritis rarely results from such abrupt and transient elevations in the serum concentration of uric acid. In contrast hyperuricemia may precede and actually cause acute renal

failure. This form of acute renal failure due to acute tubular obstruction by uric acid is usually seen in patients with leukemia or lymphoma who are treated with cytotoxic drugs. In this instance the therapy should include rapid and appropriate expansion of the extracellular fluid space, administration of diuretics, and alkalinization of the urine in order to promote increased solubility of uric acid in the urine.

It may be difficult to determine the temporal and cause-effect relationship between acute renal failure and hyperuricemia because the serum concentration of uric acid does not provide a reliable guideline. Calculation of the ratio of uric acid concentration to creatinine concentration in the urine may be helpful. A ratio greater than one suggests the presence of acute intratubular obstruction with uric acid precipitation whereas a value less than one is more consistent with a nonuric acid obstructive type of acute renal failure.

### Role of Diuretic Agents

A discussion of acute renal failure and its clinical management would be incomplete without some consideration of the role of diuretic agents. Presently, there are no clear guidelines, and the value of diuretic therapy remains controversial. Furosemide and mannitol are commonly used either separately or in combination during the oliguric phase of acute renal failure. Both agents increase renal blood flow which may decrease the rise in renal resistance. Both agents also increase intratubular pressure and may lead to dislodgement and eventual excretion of cellular debris that obstructs tubular flow. As a result, an oliguric patient may convert to the polyuric phase. Such a trial may be justified because morbidity and mortality appear to be lower with polyuric renal failure.

There is no single optimal recommended diuretic therapy. One may slowly administer 50 ml of 25 per cent mannitol intravenously during a period of five to ten minutes. Urinary volume changes must be monitored closely during the next two hours, and an increase in urine flow rate of greater than 40 ml/hr is arbitrarily considered a positive response. Intravenous furosemide, 200-400 mg given slowly with careful monitoring of urine volume during the next two to four hours, may also be of value. If urinary volume increases significantly, addition of fluid and diuretics may be needed to maintain adequate urine flow rates. No diuretic should be used without prior adequate fluid replacement and volume challenge. Furthermore, large doses of furosemide have been reported to cause hearing problems, particularly in patients receiving other



oto-toxic agents (e.g., amino-glycosides). In the absence of a diuretic response to either or both agents, further drug administration is not recommended.

### Summary

There are numerous causes of acute renal failure. In spite of attempts to prevent acute renal failure in clinical circumstances, patients continue to develop this syndrome de novo and during illness. To understand the pathophysiology of this syndrome, it is appropriate to differentiate between the initiating and maintaining phases. The initiating event may be renal ischemia or a direct effect by a nephrotoxic agent or both. In the maintenance phase, renal functional impairment is maintained by a number of factors which include persistent renal vasoconstriction, tubular obstruction, leakage of filtrate across the damaged tubular epithelium, and a reduction in glomerular capillary permeability. Further work in this interesting area may provide additional tools for the management of patients who develop acute renal failure. It may also delineate factors that would help to prevent the occurrence of the syndrome. A high index of clinical suspicion should result in early recognition of acute renal failure. Once recognized, considerable effort should be directed toward recognition and treatment of reversible factors. Management of established acute renal failure should include good control of fluid, electrolytes and metabolic abnormalities, prevention of infection and, if it already exists, prompt treatment with appropriate antimicrobial agents. If trial of diuretic therapy fails or if azotemia continues, early and extensive use of dialysis therapy should be considered. With this approach, a normal level of renal function will be recovered by the majority of patients.

### Self Assessment Questions

1. What is the common residual abnormality in renal function after recovery from acute renal failure?
2. What is the leading cause of death in acute renal failure?
3. Should hypocalcemia seen in acute renal failure routinely be treated?
4. What are the EKG abnormalities associated with hyperkalemia?
5. Which form of dialysis is more efficient in rapid removal of potassium?

(Answers on page 531)

## Physician Impairment

(Continued from page 515)

### References

1. Talbott, G.; Benson, Douglas and Benson, Earl: Impaired physicians — The dilemma of identification. *Postgrad. Med.* 68(6):56-64, 1980.
2. Pfifferling, John-Henry: *The Impaired Physician: An Overview*. Chapel Hill, NC, Health Sciences Consortium, 1980.
3. Tokarz, J. et al.: *Beyond Survival*. Resident Physicians Section of the AMA, 1979.
4. Lipp, Martin R.: *The Bitter Pill*. New York, Harper and Row, 1980.

### Resources

Committee on Mental Health, American Academy of Family Practice.

Department of Mental Health, American Medical Association. Biannual Proceedings of the Conferences on Impaired Physicians and Newsletter.

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## Drug INFORMATION

LINDA HOGAN, M.S., R.Ph., *Editor*

### *Body Stimulants Abuse*

**Question:** What are the "body stimulants" that are currently being abused?

**Answer:** Most of the advertised "body stimulants" contain a combination of three non-prescription ingredients: phenylpropanolamine, ephedrine, and caffeine. These "stimulants" are available in capsule or tablets similar in appearance to amphetamine products currently marketed. Various media advertisements and mail order companies promote these look-alike amphetamines as "stimulants." As street drugs, they are promoted as amphetamines or "uppers." Other street names for these products are *Pink Football*, *White Cross*, *Blue and Blue*, and *Black Dex*.

**Question:** What can be done about the mail order promotion of these products?

**Answer:** The FDA is aware of the problem. No immediate action has been taken due to the fact that the product mailed is a non-prescription item. Although the advertising is misleading, the product is properly labeled for over-the-counter (OTC) use. The FDA OTC advisory committee has proposed monographs that would allow only caffeine to be marketed as a stimulant. However, the monographs have not been approved, and are therefore not official at this time. The FDA may act on this situation if it considers such OTC products to be a health hazard.<sup>1</sup>

**Question:** Does Kansas law contain any regulations dealing with these products?

**Answer:** Effective July 1, 1981, the promotion and sale of any substance manufactured to look like a controlled substance is illegal in Kansas. However,

high doses of phenylpropanolamine, ephedrine, and caffeine are still available in OTC drug products marketed as cold preparations and diet suppressants.

**Question:** Are there reports of health problems with phenylpropanolamine?

**Answer:** There is one report of cerebral hemorrhage<sup>2</sup> associated with phenylpropanolamine use. Several cases of hypertensive episodes,<sup>3</sup> mental disturbances,<sup>4</sup> psychotic episodes,<sup>4</sup> and CNS effects<sup>5</sup> have been identified in the literature. The adrenergic properties of phenylpropanolamine may also lead to an increase in blood glucose levels.

**Question:** How do we treat the adverse effects or an overdose of these agents?

**Answer:** The treatment of frank phenylpropanolamine overdose is the same as other sympathomimetic agents. Providing the patient has stable respiratory and cardiovascular parameters, prevention of absorption is the first treatment. Emesis should be initiated if the patient has not lost gag reflex and is not comatose or convulsing. If unable to induce emesis, endotracheal intubation should be performed, followed by gastric lavage. The use of activated charcoal and cathartics may also be indicated. If seizures are present, they may be controlled with intravenous diazepam.<sup>7</sup> Physostigmine has been used successfully in some severely toxic patients.<sup>7</sup> Other treatment is supportive.

*Submitted by Bruce Scott, R.Ph.,  
and Janet Ralstin, R.Ph.*

References available from the Drug Information Service, UKSM-KC, Dept. of Pharmacy, 3930 Cambridge, Kansas City, KS 66103.



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# *The President's Message*

## **Thanksgiving**

Giving thanks is the expression of gratitude. Let us consider the following:

- Living in a free land that was made possible by our forefathers;
- Practicing in a comfortable community that we did not establish;
- Working in convenient buildings that we did not build with our own hands;
- Benefitting from vast knowledge that we did not ourselves discover;
- Enjoying beautiful music and art that we did not compose or create;
- Nourished with the plenty of this land, grown for us by someone we do not know;
- Surrounded by people with special abilities without whom we could accomplish very little;
- Almost complacent with our rights and opportunities that were gained for us by others;
- Those occasional instances when healing takes place when it was not expected.



For these and all our many other blessings, and for the privilege of prayer, let us be grateful.

Fraternally,

*Herman W. Hiesterman M.D.*  
President



## *The Road Retaken*

The presence in this issue of articles relating to impaired physicians indicates, quite intentionally, that this is a form of recognition of the Impaired Physicians Program of the Kansas Medical Society and the committee that implements it. Before members of other committees develop symptoms of sibling jealousy, let us say that this attention we consider warranted by the unique character and function of the group.

The impaired physician is undoubtedly as old as the profession. Acknowledgment that there is a problem (beyond the individual's own concern) is new, however, and organizational effort to assist in management of the problem is even newer. The effort has received remarkable response around the country, perhaps reflecting the current trend toward self-examination (again both personal and professional) and the effort to eradicate the negative aspects of physician service. The newness of the effort has stressed the lack of general guidelines with the consequent need to rely on an individualized approach but this is no deterrent since, however much epidemiologic information may be forthcoming as the programs extend, this is the only effective approach to the problem. Despite the similarity in case histories, management remains an intensely personalized matter. Since the organization is the sum of the individuals, those problems occurring within its limits produce their own justification for the organization to take an active role in resolving them, and peer concern becomes a potent force on behalf of the individual.

The Impaired Physicians Committee shares some of the basic features of standard committee anatomy and physiology, of course — financial support and membership drawn from the society and the time-honored committee functions of holding meetings and rendering reports. But the nature of this committee function sets it apart and imparts a different character to the actions of its members. What is done

in committee meetings is the least of its service since it is the activity of the members in regard to the cases coming under its scrutiny that marks its value. They provide a personalized service (which may border on emergency at times) which imposes a very different demand on them than does other committee service. This value begins with the willingness of these members to accept this particular responsibility, and their service, whatever the society relationship, is rendered to the individual with the society gaining as a secondary dividend.

The program has met with success but it is a quiet success since it is characterized by another element which is fundamental and influential in effect. This is the principle of confidentiality which is the keystone of its activities. Such a restraint on communications regarding the individuals referred to it is no stranger to the committee members since it is essentially the confidential relationship of patient and physician, but there are two quite different applications. The confidentiality directed toward the physician is obvious. In addition, however, there is the effect on standard committee function because of the inhibiting effect on the transmission of information to the society generally. Even if there is considerable community awareness of a particular case, the committee must exercise circumspection in its communications. On the other hand, the awareness of this confidentiality should be a significant factor in the willingness of the addicted physician to seek or accept help.

Coupled with this is the on-going nature of the committee's investigation of contacts (again a matter requiring confidentiality) and the process of implementing effective assistance. As those experienced in substance abuse well know, the conditions warranting committee involvement can be expected to require a considerable period of support even after a favorable course and productive state of activity are resumed. Even then, the decision and extent of



disclosure are the prerogative of the individual, and the committee adheres firmly to this principle.

This brings into focus one of the most problematic and difficult aspects of any attempt to approach the substance abuser, that of identifying such individuals at the earliest possible stage and gaining their acknowledgement and cooperation early in the course. The histories of addicted individuals bear an almost monotonous repetition of outline — only the personal details vary. The period of denial to self and others is long and devious. The presumption of secrecy, valid at first, eventually gives way and in most instances the situation has become general knowledge by the time help is sought or accepted or imposed when resisted. One of the accessory benefits of society action may be the emergence of additional information regarding the socially, psychologically, or pharmacologically susceptible individuals which could have prophylactic value for all of us. But as confidentiality and tact are even more essential in the early referral, so is the situation the more challenging for the committee member and for the therapeutic course that may evolve.

It should be noted that the committee effort has met with an encouraging degree of acceptance and cooperation from contacts, from individuals referred, and from the profession generally. Perhaps there is a sense of relief on the part of victim and family, and of colleagues as well, as this expression of informed and concerned professional interest is manifested. This denotes the spirit of the intent of the committee, and its continued effectiveness will be determined by the capacity of the society to provide a continuing group with the appropriate feelings and professional dedication demonstrated by the current membership.

At the same time, the progress of this and similar programs over the country reinforces, by both its successes and its failures, the awareness that prevention of such impairment must be increasingly sought. The article by Pfifferling, Blum, and Wood, reprinted in this issue from the *Journal of the Florida Medical Association*, goes into the matter in a penetrating and authoritative manner. We are probably not alone, however, in observing a conflict of attitudes on the medical scene — perhaps only a revised and updated version of the conflict physicians have always faced — but evidence that the pressures that promote substance abuse in physicians will not soon disappear. At the moment, there is a strong public voice calling for increased concern on the part of the physician for the patient *in toto*. We must know all about him — not just his pathology and dysfunction — and we must give unstintingly of ourselves in

reaching the whole person. But on the other hand, we are advised on good authority to spare ourselves, to acknowledge our limitations and live with them comfortably, and, above all, avoid the God role.

We can hope, at least, that the experiences of the impaired physicians programs can identify those particular features of the profession that influence toward or away from abusive habits — the exalting and rewarding effects of professional accomplishment, the distresses and crises of self-esteem from failed expectations or professional defeat, those personal devils who despoil our enjoyment of the former and intensify the agonies of the latter, the compulsion to be what we fear we are not and can never be — and the anesthesia of daily demands so that we scarcely realize it is happening to us at all.

But a word from the other side of the street is in order. The publicity attending the IPPs has concentrated almost exclusively on the substance-abuser and has obscured the fact that the physically disabled physician is, by definition and professional interest, a matter of equal concern. This seeming exclusion stems primarily from the larger number of abuse-disabled physicians. But more significantly, their differences in character and course mean that they have only a generic connection. Physical disability covers a wide range of etiologies and forms but tends to be more explicit in state and prognosis. A realistic capability is more readily achieved and accommodated. But above all, it bears a very different social mark. It inspires compassion — even commendation — and cooperation rather than stigma and rejection. Society and the profession are more comfortable with the physical limitations which are recognizable and, however regrettable, measurable and more readily accepted. The rehabilitation efforts are satisfying and in the long run the physically disabled physician's accommodation depends to a large extent upon what he chooses to make of it.

Perhaps the most significant feature of the IPPs is that they can help to move the management of drug abuse along similar lines. The increased occurrence of drug abuse, the increased acknowledgment of the physician-abuser — and the knowledge gained from facing the problem more directly — have done much to bring this disability to a rational and objective level of public scrutiny. The understanding and experience gained should go far toward eliminating some of those attitudes and prejudices that have deterred the salvaging of the addicted physician — in other words, to render the problem more manageable by bringing to the effort the same interpretations that apply to the physically disabled physician. — D.E.G.





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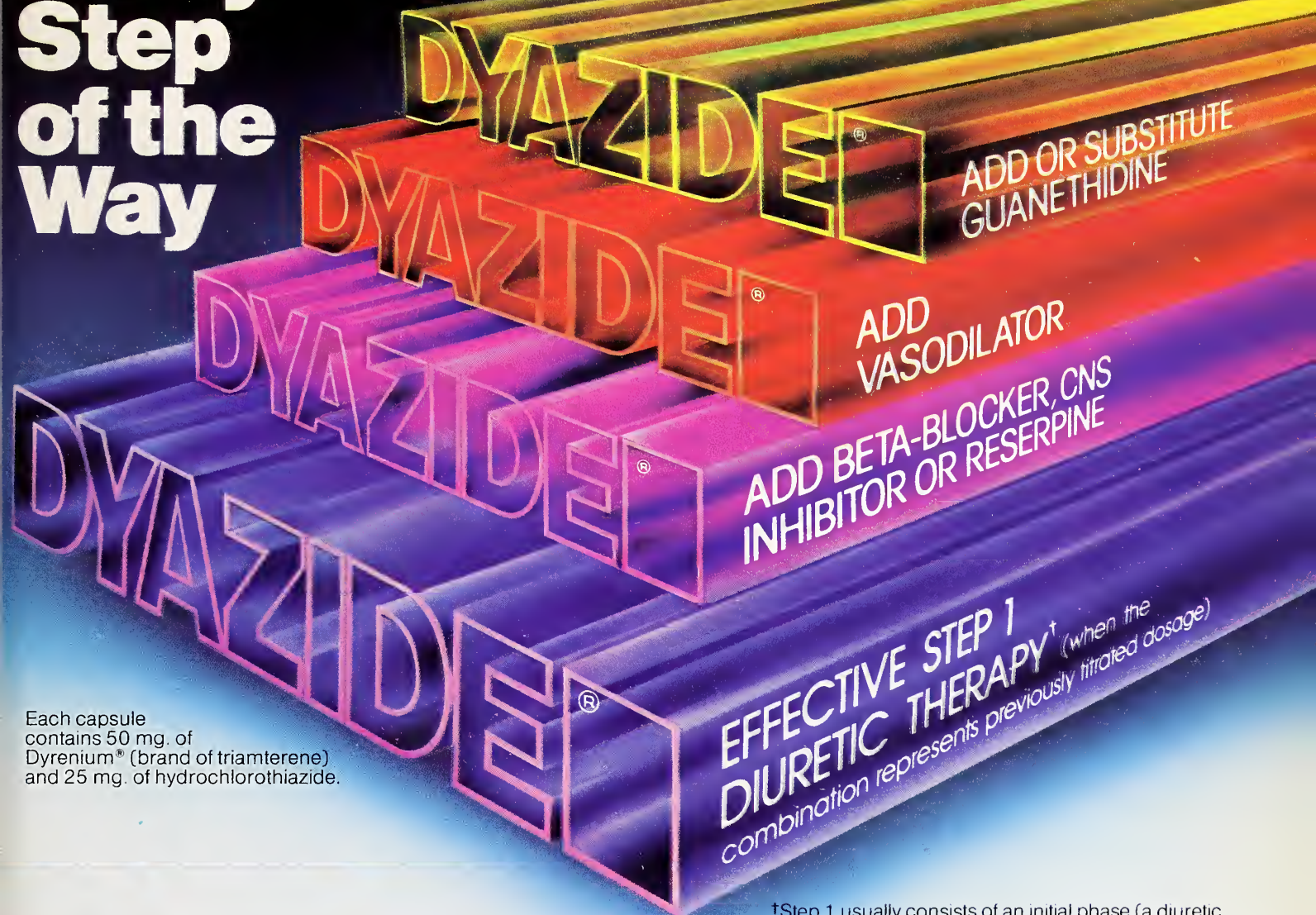
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# In Hypertension...When You Need to Conserve K<sup>+</sup>\*

## Every Step of the Way



Each capsule contains 50 mg. of Dyrenium® (brand of triamterene) and 25 mg. of hydrochlorothiazide.

†Step 1 usually consists of an initial phase (a diuretic alone), a titration phase (dosage adjustment and/or addition of a K<sup>+</sup> supplement or K<sup>+</sup>-sparing agent), and a maintenance phase (a diuretic alone or in combination with a K<sup>+</sup> supplement or K<sup>+</sup>-sparing agent).

### Serum K<sup>+</sup> and BUN should be checked periodically (see Warnings).

Before prescribing, see complete prescribing information in SK&F Co. literature or PDR. The following is a brief summary.

#### WARNING

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

**Contraindications:** Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

**Warnings:** Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K<sup>+</sup> levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K<sup>+</sup> intake. Associated widened QRS complex or arrhythmia requires prompt additional therapy. Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and

triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

**Precautions:** Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Watch for signs of impending coma in severe liver disease. If spironolactone is used concomitantly, determine serum K<sup>+</sup> frequently; both can cause K<sup>+</sup> retention and elevated serum K<sup>+</sup>. Two deaths have been reported with such concomitant therapy (in one, recommended dosage was exceeded; in the other, serum electrolytes were not properly monitored). Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis and aplastic anemia have been reported with thiazides. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased

dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

**Adverse Reactions:** Muscle cramps, weakness, dizziness, headache, dry mouth, anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances. Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and, rarely, allergic pneumonitis have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis and of impotence have been reported with the use of 'Dyazide', although a causal relationship has not been established.

**Supplied:** Bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (intended for institutional use only); in Patient-Pak™ unit-of-use bottles of 100.

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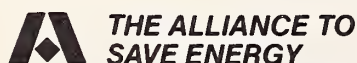
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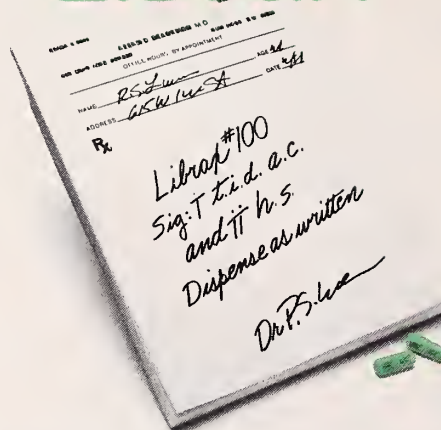
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A public service message from this magazine and the Advertising Council

# Specify Librax®



Each capsule contains 5 mg chlordiazepoxide HCl and 2.5 mg clidinium Br.

Please consult complete prescribing information, a summary of which follows:

**Indications:** Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows: "Possibly" effective: as adjunctive therapy in the treatment of peptic ulcer and in the treatment of the irritable bowel syndrome (irritable colon, spastic colon, mucous colitis) and acute enterocolitis. Final classification of the less-than-effective indications requires further investigation.

**Contraindications:** Glaucoma, prostatic hypertrophy, benign bladder neck obstruction; hypersensitivity to chlordiazepoxide HCl and/or clidinium bromide.

**Warnings:** Caution patients about possible combined effects with alcohol and other CNS depressants, and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Physical and psychological dependence rarely reported on recommended doses, but use caution in administering Librium® (chlordiazepoxide HCl/Roche) to known addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions) reported following discontinuation of the drug.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy. Advise patients to discuss therapy if they intend to or do become pregnant.

As with all anticholinergics, inhibition of lactation may occur.

**Precautions:** In elderly and debilitated, limit dosage to smallest effective amount to preclude ataxia, oversedation, confusion (no more than 2 capsules/day initially; increase gradually as needed and tolerated). Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider pharmacology of agents, particularly potentiating drugs such as MAO inhibitors, phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions reported in psychiatric patients. Employ usual precautions in treating anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship not established.

**Adverse Reactions:** No side effects or manifestations not seen with either compound alone reported with Librax. When chlordiazepoxide HCl is used alone, drowsiness, ataxia, confusion may occur, especially in elderly and debilitated, avoidable in most cases by proper dosage adjustment, but also occasionally observed at lower dosage ranges. Syncope reported in a few instances. Also encountered: isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent, generally controlled with dosage reduction; changes in EEG patterns may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice, hepatic dysfunction reported occasionally with chlordiazepoxide HCl, making periodic blood counts and liver function tests advisable during protracted therapy. Adverse effects reported with Librax typical of anticholinergic agents, i.e., dryness of mouth, blurring of vision, urinary hesitancy, constipation. Constipation has occurred most often when Librax therapy is combined with other spasmolytics and/or low residue diets.



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# Irritable BOWEL SYNDROME\*

Artist's concept of myoelectrical slow waves of the colon which seem to determine the frequency of colonic motor activity.

## A visible difference in myoelectric rhythms of the colon

Studies reveal an increased frequency of 3-cycles-per-minute slow wave basic electrical activity in the colons of patients with IBS—a significant difference in basic colonic rhythm patterns from normal subjects.<sup>1,2</sup> These findings suggest a physiological basis for the spasm and hypermotility characteristic of IBS. The role of severe anxiety in triggering or aggravating such symptoms has long been recognized. Consequently, treatment should focus on both aspects of the problem.

## Librax: A logical choice for patients with IBS

Logical, because the antimotility-antispasmodic actions of the Quarzan® (clidinium bromide/Roche) component of Librax can help to relieve the distressing abdominal symptoms associated with IBS.\* Logical, because the antianxiety actions of the Librium® (chlordiazepoxide HCl/Roche) component can help to reduce the excessive anxiety that can contribute to IBS flare-ups.

**References:** 1. Sullivan MA, Cohen S, Snape WJ: *N Engl J Med* 298:878-883, Apr 20, 1978.  
2. Snape WJ et al: *Gastroenterology* 72: 383-387, Mar 1977.

Specify **Librax**®

Each capsule contains 5 mg chlordiazepoxide HCl and 2.5 mg clidinium Br.

Antianxiety/Antisecretory/Antispasmodic

\* Librax has been evaluated as possibly effective for this indication. Please see summary of prescribing information on facing page.

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# for Knotts in the night

Prescribe new formula

# Quinamm\*

## (quinine sulfate tablets)

each tablet contains quinine sulfate 260 mg



## Specific therapy for painful night leg cramps

# Merrell Dow

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Cayey, Puerto Rico 00633

### Quinamm™

(quinine sulfate tablets)

CAUTION: Federal law prohibits dispensing without prescription  
BRIEF SUMMARY

#### INDICATIONS AND USAGE

For the prevention and treatment of nocturnal recumbency leg muscle cramps.

#### CONTRAINDICATIONS

Quinamm may cause fetal harm when administered to a pregnant woman. Congenital malformations in the human have been reported with the use of quinine, primarily with large doses (up to 30 g) for attempted abortion. In about half of these reports the malformation was deafness related to auditory nerve hypoplasia. Among the other abnormalities reported were limb anomalies, visceral defects, and visual changes. In animal tests, teratogenic effects were found in rabbits and guinea pigs and were absent in mice, rats, dogs, and monkeys. Quinamm is contraindicated in women who are or may become pregnant. If this drug is used during pregnancy, or if the patient becomes pregnant while taking this drug, the patient should be apprised of the potential hazard to the fetus. Because of the quinine content, Quinamm is contraindicated in patients with known quinine hypersensitivity and in patients with glucose-6-phosphate dehydrogenase (G-6-PD) deficiency.

Since thrombocytopenic purpura may follow the administration of quinine in highly sensitive patients, a history of this occurrence associated with previous quinine ingestion contraindicates its further use. Recovery usually occurs following withdrawal of the medication and appropriate therapy.

This drug should not be used in patients with tinnitus or optic neuritis or in patients with a history of blackwater fever.

#### WARNINGS

Repeated doses or overdosage of quinine in some individuals may precipitate a cluster of symptoms referred to as cinchonism. Such symptoms, in the mildest form, include ringing in the ears, headache, nausea, and slightly disturbed vision; however, when medication is continued or after large single doses, symptoms also involve the gastrointestinal tract, the nervous and cardiovascular systems, and the skin.

Hemolysis (with the potential for hemolytic anemia) has been associated with a G-6-PD deficiency in patients taking quinine. Quinamm should be stopped immediately if evidence of hemolysis appears.

If symptoms occur, drug should be discontinued and supportive measures instituted. In case of overdosage, see OVERDOSAGE section of prescribing information.

#### PRECAUTIONS

##### General

Quinamm should be discontinued if there is any evidence of hypersensitivity (See CONTRAINDICATIONS). Cutaneous flushing, pruritus, skin rashes, fever, gastric distress, dyspnea, ringing in the ears, and visual impairment are the usual expressions of hypersensitivity, particularly if only small doses of quinine

have been taken. Extreme flushing of the skin accompanied by intense, generalized pruritus is the most common form. Hemoglobinuria and asthma from quinine are rare types of idiosyncrasy.

In patients with atrial fibrillation, the administration of quinine requires the same precautions as those for quinidine. (See Drug Interactions.)

##### Drug Interactions

Increased plasma levels of digoxin and digitoxin have been demonstrated in individuals after concomitant quinine administration. Because of possible similar effects from use of quinine, it is recommended that plasma levels for digoxin and digitoxin be determined for those individuals taking these drugs and Quinamm concomitantly.

Concurrent use of aluminum-containing antacids may delay or decrease absorption of quinine.

Cinchona alkaloids, including quinine, have the potential to depress the hepatic enzyme system that synthesizes the vitamin K dependent factors. The resulting hypoprothrombinemic effect may enhance the action of warfarin and other oral anticoagulants.

The effects of neuromuscular blocking agents (particularly pancuronium, succinylcholine, and tubocurarine) may be potentiated with quinine, and result in respiratory difficulties.

Urinary alkalinizers (such as acetazolamide and sodium bicarbonate) may increase quinine blood levels with potential for toxicity.

##### Quinine Laboratory Interactions

Quinine may produce an elevated value for urinary 17-ketogenic steroids when the Zimmerman method is used.

##### Carcinogenesis, Mutagenesis, Impairment of Fertility

A study of quinine sulfate administered in drinking water (0.1%) to rats for periods up to 20 months showed no evidence of neoplastic changes.

Mutation studies of quinine (dihydrochloride) in male and female mice gave negative results by the micronucleus test. Intraperitoneal injections (0.5 mM/kg.) were given twice, 24 hours apart. Direct *Salmonella typhimurium* tests were negative, when mammalian liver homogenate was added, positive results were found.

No information relating to the effect of quinine upon fertility in animal or in man has been found.

##### Pregnancy

Category X. See CONTRAINDICATIONS.

##### Nonteratogenic Effects

Because quinine crosses the placenta in humans, the potential for fetal effects is present. Stillbirths in mothers taking quinine have been reported in which no obvious cause for the fetal deaths was shown. Quinine in toxic amounts has been associated with abortion. Whether this action is always due to direct effect on the uterus is questionable.

##### Nursing Mothers

Caution should be exercised when Quinamm is given to nursing women because quinine is excreted in breast milk (in small amounts).

#### ADVERSE REACTIONS

The following adverse reactions have been reported with Quinamm in therapeutic or excessive dosage. (Individual or multiple symptoms may represent cinchonism or hypersensitivity.)

**Hematologic:** acute hemolysis, thrombocytopenic purpura, agranulocytosis, hypoprothrombinemia

**CNS:** visual disturbances, including blurred vision with scotomata, photophobia, diplopia, diminished visual fields, and disturbed color vision, tinnitus, deafness, vertigo, headache, nausea, vomiting, fever, apprehension, restlessness, confusion, and syncope

**Dermatologic/allergic:** cutaneous rashes (urticarial, the most frequent type of allergic reaction, papular, or scarlatin), pruritus, flushing of the skin, sweating, occasional edema of the face

**Respiratory:** asthmatic symptoms

**Cardiovascular:** anginal symptoms

**Gastrointestinal:** nausea and vomiting (may be CNS-related), epigastric pain

#### DRUG ABUSE AND DEPENDENCE

Tolerance, abuse, or dependence with Quinamm has not been reported

#### OVERDOSAGE

See prescribing information for a discussion on symptoms and treatment of overdose

#### DOSEAGE AND ADMINISTRATION

1 tablet upon retiring. If needed, 2 tablets may be taken nightly—1 following the evening meal and 1 upon retiring.

After several consecutive nights in which recumbency leg cramps do not occur, Quinamm may be discontinued in order to determine whether continued therapy is needed.

Product Information as of October, 1980

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MERRELL-NATIONAL LABORATORIES Inc.  
Cayey, Puerto Rico 00633

Direct Medical Inquiries to

## Merrell



MERRELL DOW PHARMACEUTICALS INC.  
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## Substance Abuse

(Continued from page 496)

one another. In other parts of the country, local physician support groups are commonplace. An international organization — International Doctors in Alcoholics Anonymous (IDAA) — is a group open to recovering alcoholic and other addicted members of the health professions. Psychologists, veterinarians, optometrists, and clinical PhDs belong, although the membership is primarily comprised of physicians. In 1982, the annual IDAA meeting will be held in Chicago. For information about AA contacts for physicians as well as IDAA, write to Dr. Louis K. Reed, Secretary, International Doctors in Alcoholics Anonymous, 1905 Olney Road, Youngstown, OH 44511.

In Kansas, the Impaired Physician Committee of the Kansas Medical Society can put an inquiring physician into contact with others who have faced the same problems. These inquiries are handled with strict confidence, and no records are kept.

Help for family members can also be obtained by contacting the Auxiliary to the Kansas Medical Society. Arrangements can be made for confidential contact with organizations and other physicians' spouses who have been involved in similar situations.

The physician and spouse who have been through treatment have a variety of support services available, particularly if they've chosen a local treatment center. All treatment programs listed above have excellent aftercare and social support groups.

## Summary

Although alcoholic and other addicted physicians are more resistant to treatment, when they finally consent to it, they do well. The physician's husband or wife also needs help. Good treatment centers with experience in treating substance abusers and particularly physicians are available in Kansas. Family involvement in both treatment and aftercare is important.

## References

1. Reed, Edgar A.: What can you do about an impaired physician? *Leg. Aspects Med. Pract.* 8(4):40-49, 1980.
2. Osmond, Humphrey: God and the doctor. *N. Engl. J. Med.* 302:555-558, 1980.
3. Smith, David: The impaired physician: Physicians as patients. *LACMA Phys.* pp. 39-40, June 21, 1980.
4. Green, Robert C. *et al.*: Drug addiction among physicians: The Virginia experience. *JAMA* 236:1372-1375, 1976.
5. Bissell, LeClair and Jones, Robert W.: The alcoholic physician — A survey. *Am. J. Psychiatry* 133:1142-1146, 1976.

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Please see following page for full prescribing information.

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**Hemorrhoids and other anorectal uses**—TUCKS extra-soft cloth pads allow for the gentlest possible application to tender, inflamed, hemorrhoidal tissue. TUCKS are effective cleansing pads for everyday personal hygiene. Used on outer rectal areas, they remove residue that can bring on more irritation. Pads are premoistened with 50% witchhazel, 10% glycerin USP and de-ionized purified water USP which acts as a cooling, soothing lotion to help comfort sensitive anorectal tissue.

**Vaginal Uses**—Comforting as an adjunct in postoperative care after episiotomies and other vaginal surgery or when relief from vaginal itching, burning or irritation is required.

**ANUSOL-HC® SUPPOSITORIES**

Hemorrhoidal Suppositories with Hydrocortisone Acetate

**ANUSOL-HC® CREAM**

Rectal Cream with Hydrocortisone Acetate

**Caution:** Federal law prohibits dispensing without prescription.

**Description:** Each Anusol-HC Suppository contains hydrocortisone acetate, 10.0 mg; bismuth subgallate, 2.25%; bismuth resorcin compound, 1.75%; benzyl benzoate, 1.2%; Peruvian balsam, 1.8%; zinc oxide, 11.0%; also contains the following inactive ingredients: dibasic calcium phosphate, and certified coloring in a hydrogenated vegetable oil base.

Each gram of Anusol-HC Cream contains hydrocortisone acetate, 5.0 mg; bismuth subgallate, 22.5 mg; bismuth resorcin compound, 17.5 mg; benzyl benzoate, 12.0 mg; Peruvian balsam, 18.0 mg; zinc oxide, 110.0 mg; also contains the following inactive ingredients: propylene glycol, propylparaben, methylparaben, polysorbate 60 and sorbitan monostearate in a water-miscible base of mineral oil, glyceryl stearate and water.

Anusol-HC Suppositories and Anusol-HC Cream help to relieve pain, itching and discomfort arising from irritated anorectal tissues. These preparations have a soothing, lubricant action on mucous membranes, and the antiinflammatory action of hydrocortisone acetate in Anusol-HC helps to reduce hyperemia and swelling.

The hydrocortisone acetate in Anusol-HC is primarily effective because of its antiinflammatory, antipruritic and vasoconstrictive actions.

**Indications and Usage:** Anusol-HC Suppositories and Anusol-HC Cream are adjunctive therapy for the symptomatic relief of pain, itching and discomfort in: external and internal hemorrhoids, proctitis, papillitis, cryptitis, anal fissures, incomplete fistulas, pruritus ani and relief of local pain and discomfort following anorectal surgery.

Anusol-HC is especially indicated when inflammation is present. After acute symptoms subside, most patients can be maintained on regular Anusol® Suppositories or Ointment.

**Contraindications:** Anusol-HC Suppositories and Anusol-HC Cream are contraindicated in those patients with a history of hypersensitivity to any of the components of the preparations.

**Warnings:** The safe use of topical steroids during pregnancy has not been fully established. Therefore, during pregnancy, they should not be used unnecessarily on extensive areas, in large amounts or for prolonged periods of time.

**Precautions:** **General:** Symptomatic relief should not delay definitive diagnoses or treatment.

Prolonged or excessive use of corticosteroids might produce systemic effects.

If irritation develops, Anusol-HC Suppositories and Anusol-HC Cream should be discontinued and appropriate therapy instituted.

In the presence of an infection the use of an appropriate antifungal or antibacterial agent should be instituted. If a favorable response does not occur promptly, the corticosteroid should be discontinued until the infection has been adequately controlled.

Anusol-HC is not for ophthalmic use.

**Pregnancy**

See "WARNINGS"

**Pediatric Use**

Care should be taken when using the corticosteroid hydrocortisone acetate in children and infants.

**Dosage and Administration:** Anusol-HC Suppositories—

**Adults:** Remove foil wrapper and insert suppository into the anus. Insert one suppository in the morning and one at bedtime for 3 to 6 days or until inflammation subsides. Then maintain comfort with regular Anusol Suppositories.

**Anusol-HC Cream—Adults:** After gentle bathing and drying of the anal area, remove tube cap and apply to the exterior surface and gently rub in. For internal use, attach the plastic applicator and insert into the anus by applying gentle continuous pressure. Then squeeze the tube to deliver medication. Cream should be applied 3 or 4 times a day for 3 to 6 days until inflammation subsides. Then maintain comfort with regular Anusol Ointment.

**NOTE:** If staining from either of the above products occurs, the stain may be removed from fabric by hand or machine washing with household detergent.

**How Supplied:** Anusol-HC Suppositories—boxes of 12 (N 0071-1089-07) and boxes of 24 (N 0071-1089-13) in silver foil strips with Anusol-HC printed in black.

Anusol-HC Cream—one-ounce tube (N 0071-3090-13) with plastic applicator.

**Store between 59°-86°F (15°-30°C).**

1089G010

6. Mooney, John: No alcoholic doctor's case is hopeless — Take mine. *Med. Econ.* 55(18):86-106, 1978.

7. Anon.: Dr. Bob's nightmare. *Alcoholics Anonymous*, 2nd ed. New York, Alcoholics Anonymous World Services, Inc., pp. 171-181, 1955.

8. Anon.: *Dr. Bob and the Good Old Timers*. New York, Alcoholics Anonymous World Services, Inc., 1980.

9. Silkworth, William D.: The doctor's opinion. *Alcoholics Anonymous*, 2nd ed. New York, Alcoholics Anonymous World Services, Inc. pp. xxiii-xxx, 1955.

10. Anon.: Bill's story. *Alcoholics Anonymous*, 2nd ed. New York, Alcoholics Anonymous World Services, Inc., pp. 1-16, 1955.

11. Kurtz, Ernest J.: *Not God*. Center City, Minnesota, Hazelden Foundation, 1979.

12. Anon.: *Alcoholics Anonymous Comes of Age*. New York, Alcoholics Anonymous World Service, Inc., p. 64, 1957.

13. Tiebout, Harry M.: Intervention in psychotherapy. *Am. J. Psychoanal.* 22:1-6, 1968.

14. Tiebout, Harry M.: Surrender vs compliance in therapy. *Q. J. Stud. Alcohol* 14:58-68, 1953.

15. Tiebout, Harry M.: Ego factors in surrender in alcoholism. *Q. J. Stud. Alcohol* 15:610-621, 1954.

16. Tiebout, Harry M.: The Act of Surrender in the Therapeutic Process. New York, National Council on Alcoholism (pamphlet).

17. Tiebout, Harry M.: Conversion as a Psychological Phenomenon. New York, National Council on Alcoholism (pamphlet).

18. Tiebout, Harry M.: *Direct Treatment of a Symptom*. Center City, MN, Hazelden Foundation (pamphlet); condensed (with permission) from *Problems of Addiction and Habituation*, New York, Grune & Stratton, 1973.

19. Johnson, Vernon: *I'll Quit Tomorrow*. New York, Harper & Row, 1980.

20. Michael Q. Patton: *The Outcomes of Treatment: Patients Admitted to Hazelden in 1976*. Center City, MN, Hazelden Foundation, 1979.

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## Acute Renal Failure

(Continued from page 520)

### Answers

1. Maximum urine concentrating ability
2. Infection
3. No
4. Prolonged QRS complex, absent P waves, and tall T waves
5. Hemodialysis

### Suggested Readings

1. Anderson, R. J. *et al.*: Nonoliguric acute renal failure. *N. Engl. J. Med.* 296:1134-1138, 1977.
2. Abel, R. M. *et al.*: Improved survival from acute renal failure after treatment with intravenous essential L-aminoacids and glucose. *N. Engl. J. Med.* 288:695-699, 1973.
3. Fenn, W. F.: Acute renal failure. *Diseases of the Kidney* (Early, L. E. and Gottschalk, C. W., eds.). Boston, Little, Brown and Company, pp. 167-210, 1979.
4. Levinski, N. G.; Alexander, E. A. and Venkatachalam, M. A.: Acute renal failure. *The Kidney* (Brenner, B. M. and Rector, R. C., eds.). Philadelphia, W. B. Saunders Company, pp. 1181-1236, 1981.

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# OPT TO STOP UNNECESSARY HEALTH CARE COSTS

Kansas ranks favorably nationally in the availability and quality of health care services. This is reflected in the standard of life and general health enjoyed by us. And we're proud of that.

However, over the past several years, some of our citizens evidently have been unnecessarily taking advantage of a good thing. We can't be proud of that.

More and more, people have been going into the hospital for some services and procedures that could have been performed just as satisfactorily on an out-patient basis. Not only does an unnecessary overnight hospital admission run the cost of health care coverage up for everyone . . . but sometimes it can mean a bed may not be available for someone else who really needs it.

**How badly have some of us been abusing the use of hospital facilities?**

Well, last year, for example, the national average of all Blue Cross Plans for number of in-hospital days used annually per 1,000 subscribers was 726. In Kansas, it was 995. That's 269 more days than the national average! In fact,

Kansas ranks second highest in the nation. A disturbing statistic. Furthermore, the national average of Blue Cross Plans for hospital admissions per 1,000 subscribers in 1980 was 117. In Kansas it was 171! Something is wrong.

About 50% of our in-hospital claims are for admissions of three days or less! This may indicate that some people are seeking in-patient care for routine diagnostic services or simple surgical procedures which could be performed on an out-patient basis. At less cost!

**So . . . what are we going to do about it?**

Blue Cross and Blue Shield of Kansas and Kansas doctors are developing a list of procedures and treatments that should be done on an out-patient basis so patients don't have to spend an unnecessary night in the hospital. Of course, Blue Cross and Blue Shield of Kansas will continue to pay for all covered services and procedures; we're just calling a halt to reimbursements for unnecessary room charges.

There are other ways we're holding down costs, too, while saving you from the

unneeded inconvenience of an extra night away from home. Most elective surgery pre-operative tests can be performed in advance of admission. Instead of checking into the hospital a day earlier, you'll be asked to come in for tests at a convenient time a few days before and you'll be able to spend an extra day with your family!

**We're all in this together.** Patients, physicians, hospitals, Blue Cross and Blue Shield of Kansas. We must "opt to stop" unnecessary hospital admissions. . . by opting, when appropriate, for out-patient surgery, opting for pre-admission testing, opting for out-patient diagnostic services and treatment. . . OPTing to be a wiser utilizer of health care services overall.



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#### EQUAGESIC—Abbreviated Summary

**INDICATIONS:** Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows:

"Possibly" effective, for the treatment of pain accompanied by tension and/or anxiety in patients with musculoskeletal disease or tension headache. Final classification of the less-than-effective indications requires further investigation.

The effectiveness of Equagesic in long-term use, i.e. more than four months, has not been assessed by systematic clinical studies. The physician should periodically reassess usefulness of the drug for the individual patient.

**CONTRAINDICATIONS:** Equagesic should not be given to individuals with a history of sensitivity or severe intolerance to aspirin, meprobamate, or ethoheptazine citrate.

**WARNINGS:** Careful supervision of dose and amounts prescribed for patients is advised, especially with those patients with known propensity for taking excessive quantities of drugs. Excessive and prolonged use in susceptible persons, e.g., alcoholics, former addicts, and other severe psychoneurotics, has been reported to result in dependence on or habituation to the drug. Where excessive dosage has continued for weeks or months, dosage should be reduced gradually rather than abruptly stopped, since withdrawal of a "crutch" may precipitate withdrawal reaction of greater proportions than that for which the drug was originally prescribed. Abrupt discontinuance of doses in excess of the recommended dose has resulted in some cases in the occurrence of epileptiform seizures.

Special care should be taken to warn patients taking meprobamate that tolerance to alcohol may be lowered with resultant slowing of reaction time and impairment of judgment and coordination.

**USAGE IN PREGNANCY AND LACTATION:** An increased risk of congenital malformations associated with the use

of minor tranquilizers (meprobamate, chlorthalidoxepoxide, and diazepam) during the first trimester of pregnancy has been suggested in several studies. Because use of these drugs is rarely a matter of urgency, their use during this period should almost always be avoided. The possibility that a woman of child-bearing potential may be pregnant at the time of institution of therapy should be considered. Patients should be advised that if they become pregnant during therapy or intend to become pregnant they should communicate with their physicians about the desirability of discontinuing the drug. Meprobamate passes the placental barrier. It is present both in umbilical-cord blood and in near maternal plasma levels and in breast milk of lactating mothers at concentrations two to four times that of maternal plasma. When use of meprobamate is contemplated in breast-feeding patients, the drug's higher concentration in breast milk as compared to maternal plasma levels should be considered.

Preparations containing aspirin should be kept out of the reach of children. Equagesic is not recommended for patients 12 years of age and under.

**PRECAUTIONS:** Should drowsiness, ataxia, or visual disturbance occur, the dose should be reduced. If symptoms continue, patients should not operate a motor vehicle or any dangerous machinery. Suicidal attempts with meprobamate have resulted in coma, shock, vasomotor and respiratory collapse, and anuria. Very few suicidal attempts were fatal, although some patients ingested very large amounts of the drug (20 to 40 gm). These doses are much greater than recommended. The drug should be given cautiously, and in small amounts, to patients who have suicidal tendencies. In cases where excessive doses have been taken, sleep ensues rapidly and blood pressure, pulse, and respiratory rates are reduced to basal levels. Hyperventilation has been reported occasionally. Any drug remaining in the stomach should be removed and symptomatic treatment given. Should respiration become very shallow and slow, CNS stimulants, e.g., caffeine, Metrazol, or amphet-

mine, may be cautiously administered. If severe hypotension develops, pressor amines should be used parenterally to restore blood pressure to normal levels.

**ADVERSE REACTIONS:** A small percentage of patients may experience nausea with or without vomiting and epigastric distress. Dizziness occurs rarely when meprobamate and ethoheptazine citrate with aspirin is administered in recommended dosage. The meprobamate may cause drowsiness but, as a rule, this disappears as therapy is continued. Should drowsiness persist and be associated with ataxia, this symptom can usually be controlled by decreasing the dose, but occasionally it may be desirable to administer central stimulants such as amphetamine or mephentermine sulfate concomitantly to control drowsiness.

A clearly related side effect to the administration of meprobamate is the rare occurrence of allergic or idiosyncratic reactions. This response develops, as a rule, in patients who have had only 1-4 doses of meprobamate and have not had a previous contact with the drug. Previous history of allergy may or may not be related to the incidence of reactions. Mild reactions are characterized by an itchy urticarial or erythematous, maculopapular rash which may be generalized or confined to the groin. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema, and fever have also been reported.

More severe cases, observed only very rarely, may also have other allergic responses, including fever, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case), and hyperthermia. Treatment should be symptomatic such as administration of epinephrine, antihistamine, and possibly hydrocortisone. Meprobamate should be stopped, and institution of therapy should not be attempted.

Rare cases have been reported where patients receiving meprobamate suffered from aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis, and hemolytic anemia. In nearly every instance reported, other toxic agents known to have caused these conditions have been associated with meprobamate. A few cases of leukopenia during

continuous administration of meprobamate are reported, most of these returned to normal without discontinuation of the drug.

Impairment of accommodation and visual acuity has been reported rarely.

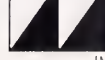
**OVERDOSE:** Two instances of accidental or intentional significant overdosage with ethoheptazine citrate combined with aspirin have been reported. These were accompanied by symptoms of CNS depression, including drowsiness and light-headedness, with uneventful recovery. However, on the basis of pharmacological data, it may be anticipated that CNS stimulation could occur. Other anticipated symptoms would include nausea and vomiting. Appropriate therapy of signs and symptoms as they appear is the only recommendation possible at this time. Overdosage with ethoheptazine citrate combined with aspirin would probably produce the usual symptoms and signs of salicylate intoxication. Observation and treatment should include induced vomiting or gastric lavage, specific parenteral electrolyte therapy for ketoacidosis and dehydration, watching for evidence of hemorrhagic manifestations due to hypoprothrombinemia which, if it occurs, usually requires whole-blood transfusions.

**DESCRIPTION:** Each Equagesic tablet contains 150 mg meprobamate, 75 mg ethoheptazine citrate and 250 mg aspirin.

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\*This drug has been evaluated as possibly effective for this indication.

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#### WYGESIC—Abbreviated Summary

**INDICATION:** For the relief of mild-to-moderate pain.

**CONTRAINDICATION:** Hypersensitivity to propoxyphene or to acetaminophen.

**WARNINGS:** CNS ADDITIVE EFFECTS AND OVERDOSAGE. Propoxyphene in combination with alcohol, tranquilizers, sedative-hypnotics, or other CNS depressants has an additive depressant effect. Patients taking this drug should be advised of the additive effect and warned not to exceed the dosage recommended. Toxic effects and fatalities have occurred following overdoses of propoxyphene alone or in combination with other CNS depressants. Most of these patients had histories of emotional disturbances or suicidal ideation or attempts, as well as misuse of tranquilizers, alcohol, or other CNS-active drugs. Caution should be exercised in prescribing large amounts of propoxyphene for such patients (see **Management of Overdosage**).

**DRUG DEPENDENCE:** Propoxyphene can produce drug dependence characterized by psychic dependence and less frequently physical dependence and tolerance. It will only partially suppress the withdrawal syndrome in individuals physically dependent on morphine or other narcotics. The abuse liability of propoxyphene is qualitatively similar to codeine's although quantitatively less, and propoxyphene should be prescribed with the same degree of caution appropriate to the use of codeine.

**USAGE IN AMBULATORY PATIENTS:** Propoxyphene may impair the mental and/or physical abilities required for potentially hazardous tasks, e.g. driving a car or operating machinery. Patients should be cautioned accordingly.

**USAGE IN PREGNANCY:** Safe use in pregnancy has not been established relative to possible adverse effects on fetal development. INSTANCES OF WITHDRAWAL SYMPTOMS IN THE NEONATE HAVE BEEN REPORTED FOLLOWING USAGE DURING PREGNANCY. Therefore, propoxyphene should not be used in pregnant women unless, in the

judgement of the physician, the potential benefits outweigh the possible hazards.

**USAGE IN CHILDREN:** Propoxyphene is not recommended for children because documented clinical experience has been insufficient to establish safety and a suitable dosage regimen in the pediatric group.

**PRECAUTIONS:** Confusion, anxiety, and tremors have been reported in a few patients receiving propoxyphene concomitantly with orphenadrine. The CNS depressant effect of propoxyphene may be additive with other CNS depressants, including alcohol.

**ADVERSE REACTIONS:** The most frequent adverse reactions are dizziness, sedation, nausea, and vomiting. These seem more prominent in ambulatory than in nonambulatory patients; some of these reactions may be alleviated if the patient lies down. Other adverse reactions include constipation, abdominal pain, skin rashes, light-headedness, headache, weakness, euphoria, dysphoria, and minor visual disturbances. The chronic ingestion of propoxyphene in doses over 800 mg per day has caused toxic psychoses and convulsions. Cases of liver dysfunction have been reported.

**DRUG INTERACTIONS:** Propoxyphene in combination with alcohol, tranquilizers, sedative-hypnotics, and other CNS depressants has an additive depressant effect. Patients taking this drug should be advised of the additive effect and warned not to exceed the dosage recommended (see **Warnings**). Confusion, anxiety and tremors have been reported in a few patients receiving propoxyphene concomitantly with orphenadrine.

**MANAGEMENT OF OVERDOSAGE:** SYMPTOMS The manifestations of serious overdosage with propoxyphene are similar to those of narcotic overdosage and include respiratory depression (a decrease in respiratory rate and/or tidal volume, Cheyne-Stokes respiration, cyanosis), extreme somnolence progressing to stupor or coma, pupillary constriction, and circulatory collapse. In addition to these characteristics, which are reversed by narcotic antago-

nists such as naloxone, there may be other effects. Overdoses of propoxyphene can cause delay of cardiac conduction as well as focal or generalized convulsions, a prominent feature in most cases of severe poisoning. Cardiac arrhythmias and pulmonary edema have occasionally been reported, and apnea, cardiac arrest, and death have occurred.

Symptoms of massive overdosage with acetaminophen may include nausea, vomiting, anorexia, and abdominal pain, beginning shortly after ingestion and lasting for 12 to 24 hours. However, early recognition may be difficult since early symptoms may be mild and nonspecific. Evidence of liver damage is usually delayed. After the initial symptoms, the patient may feel less ill; however, laboratory determinations are likely to show a rapid rise in liver enzymes and bilirubin. In case of serious hepatotoxicity, jaundice, coagulation defects, hypoglycemia, encephalopathy, coma, and death may follow. Renal failure due to tubular necrosis, and myocardiopathy, have also been reported.

Ingestion of 10 grams or more of acetaminophen may produce hepatotoxicity. A 13-gram dose has reportedly been fatal.

**TREATMENT:** Primary attention should be given to the reestablishment of adequate respiratory exchange through provision of a patent airway and institution of assisted or controlled ventilation. The narcotic antagonists, naloxone, nalorphine, and levallorphan, are specific antidotes against the respiratory depression produced by propoxyphene. An appropriate dose of one of these antagonists should be administered preferably I.V., simultaneously with efforts at respiratory resuscitation and the antagonist should be repeated as necessary until the patient's condition remains satisfactory. In addition to a narcotic antagonist, the patient may require careful titration with an anticonvulsant to control seizures. Analeptic drugs (e.g. caffeine or amphetamine) should not be used because of their tendency to precipitate convulsions.

Oxygen, IV fluids, vasopressors and other supportive measures should be used as indicated. Gastric lavage may be helpful. Activated charcoal can absorb a significant amount of ingested propoxyphene. Dialysis is of little value in poisoning by propoxyphene alone. Acetaminophen is rapidly absorbed, and efforts to remove the drug from the body should not be delayed. Copious gastric lavage and/or induction of emesis may be indicated. Activated charcoal is probably ineffective unless administered almost immediately after acetaminophen ingestion. Neither forced diuresis nor hemodialysis appears to be effective in removing acetaminophen. Since acetaminophen in overdose may have an antidiuretic effect and may produce renal damage, administration of fluids should be carefully monitored to avoid overload. It has been reported that mercaptamine (cysteine) or other thiol compounds may protect against liver damage if given soon after overdosage (8-10 hours). N-acetylcysteine is under investigation as a less toxic alternative to mercaptamine, which may cause anorexia, nausea, vomiting, and drowsiness. Appropriate literature should be consulted for further information (JAMA 237:2406-2407, 1977). Clinical and laboratory evidence of hepatotoxicity may be delayed up to one week. Acetaminophen plasma levels and half-life may be useful in assessing the likelihood of hepatotoxicity. Serial hepatic enzyme determinations are also recommended.

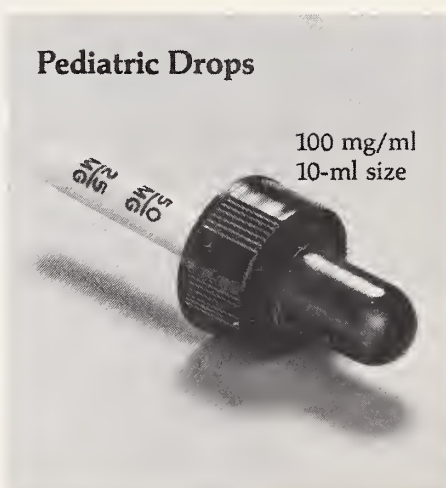
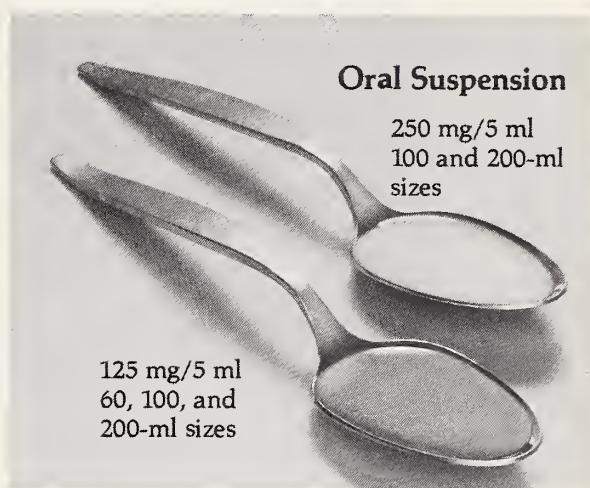
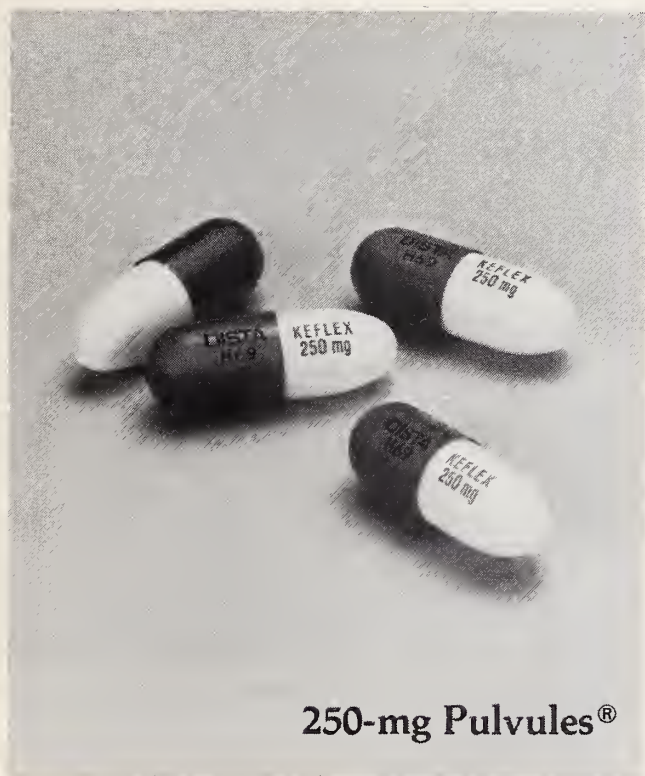
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**WARNING:** Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as a failure to heal. During long term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

**PRECAUTIONS:** As with other antibacterial preparations, prolonged use may result in overgrowth of non-susceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

**ADVERSE REACTIONS:** Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.



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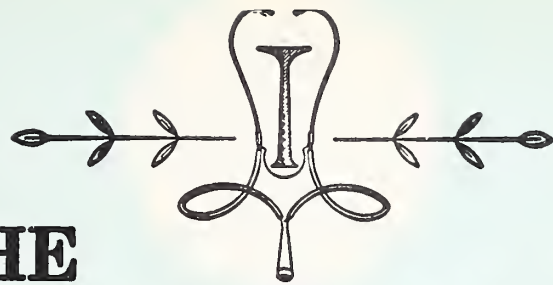
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NO. XII



# The JOURNAL of the KANSAS MEDICAL SOCIETY

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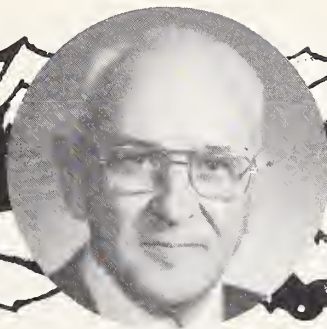
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# *The President's Message*



Herman W. Hiesterman,  
*President*



Gary Caruthers



Val Braun

*The coming of Christmas signals the end of another busy year. We hope 1981 has been pleasant and generous to you and your family. This is a good time for each of us to reflect on our good fortunes and to renew our dedication and responsibility to our profession, family, and patients. The staff and officers of the Kansas Medical Society wish each of you a joyous holiday season!*



Eleanor Bell



Lee Barber



Donna Grimes



Ramona Perez



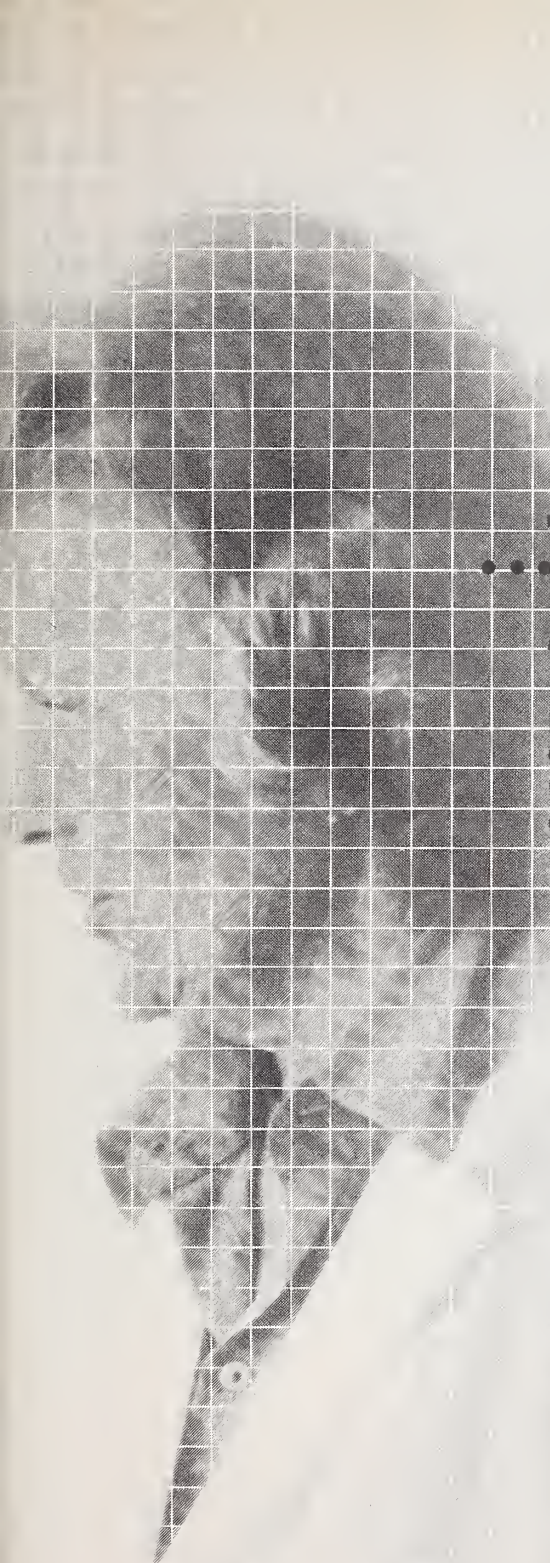
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BECAUSE YOU'RE CONVINCED  
THE PATIENT NEEDS IT



Please see summary of product information on the following page



## VALIUM® (diazepam/Roche)

Before prescribing, please consult complete product information, a summary of which follows:

**Indications:** Management of anxiety disorders, or short-term relief of symptoms of anxiety. Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic. Symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome; convulsive disorders (not for sole therapy).

The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma, may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation. The clearance of Valium and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

**Dosage:** Individualize for maximum beneficial effect. **Adults:** Anxiety disorders, symptoms of anxiety, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed, adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. **Geriatric or debilitated patients:** 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) **Children:** 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

**How Supplied:** For oral administration, Valium scored tablets—2 mg, white; 5 mg, yellow; 10 mg, blue—bottles of 100\* and 500; \* Prescription Paks of 50, available in trays of 10. \* Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25,† and in boxes containing 10 strips of 10.†

\*Supplied by Roche Products Inc., Manati, Puerto Rico 00701

†Supplied by Roche Laboratories, Division of Hoffmann-La Roche Inc., Nutley, New Jersey 07110



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COUGH

COUGH

COUGH



# For Sneezing and Nasal Congestion



## RU-TUSS<sup>®</sup> TABLETS

Each prolonged action tablet contains:

Phenylephrine Hydrochloride . . . . .	25 mg
Phenylpropanolamine Hydrochloride . . . . .	50 mg
Chlorpheniramine Maleate . . . . .	8 mg
Hyoscyamine Sulfate . . . . .	0.19 mg
Atropine Sulfate . . . . .	0.04 mg
Scopolamine Hydrobromide . . . . .	0.01 mg

Ru-Tuss Tablets act continuously for 10 to 12 hours.


- Vasoconstrictor, antihistaminic actions
- Rapid and prolonged relief of nasal and sinus congestion
- Convenient b.i.d. dosage



Boots Pharmaceuticals, Inc.  
Pioneers in Medicine



# For Coughing With Nasal and Bronchial Congestion



## RU-TUSS<sup>®</sup> EXPECTORANT

Each fluid ounce of Ru-Tuss Expectorant contains:

Codeine Phosphate	65.8 mg
(WARNING: MAY BE HABIT FORMING)	
Phenylephrine Hydrochloride	30 mg
Phenylpropanolamine Hydrochloride	20 mg
Pheniramine Maleate	20 mg
Pyrilamine Maleate	20 mg
Ammonium Chloride	200 mg
Alcohol	5%

- Vasoconstrictor, antihistaminic, expectorant actions with codeine
- Rapid relief of upper respiratory congestion and cough
- Good tasting

veeport, Louisiana 71106.

the Family



# SNEEZE

## RU-TUSS<sup>®</sup> TABLETS

### DESCRIPTION

Each prolonged action tablet contains:

Phenylephrine Hydrochloride	25 mg
Phenylpropanolamine Hydrochloride	50 mg
Chlorpheniramine Maleate	8 mg
Hyoscyamine Sulfate	0.19 mg
Atropine Sulfate	0.04 mg
Scopolamine Hydrobromide	0.01 mg

Ru-Tuss Tablets act continuously for 10 to 12 hours.

Ru-Tuss Tablets are an oral antihistaminic, nasal decongestant and anti-secretory preparation.

**INDICATIONS AND USAGE** Ru-Tuss Tablets provide relief of the symptoms resulting from irritation of sinus, nasal and upper respiratory tract tissues. Phenylephrine and phenylpropanolamine combine to exert a vasoconstrictive and decongestive action while chlorpheniramine maleate decreases the symptoms of watering eyes, post nasal drip and sneezing which may be associated with an allergic-like response. The belladonna alkaloids, hyoscyamine, atropine and scopolamine further augment the anti-secretory activity of Ru-Tuss Tablets.

**CONTRAINDICATIONS** Hypersensitivity to antihistamines or sympathomimetics. Ru-Tuss Tablets are contraindicated in children under 12 years of age and in patients with glaucoma, bronchial asthma and women who are pregnant. Concomitant use of MAO inhibitors is contraindicated.

**WARNINGS** Ru-Tuss Tablets may cause drowsiness. Patients should be warned of the possible additive effects caused by taking antihistamines with alcohol, hypnotics, sedatives or tranquilizers.

**PRECAUTIONS** Ru-Tuss Tablets contain belladonna alkaloids, and must be administered with care to those patients with glaucoma, or urinary bladder neck obstruction. Caution should be exercised when Ru-Tuss Tablets are given to patients with hypertension, cardiac or peripheral vascular disease or hyperthyroidism. Patients should avoid driving a motor vehicle or operating dangerous machinery (See Warnings).

**OVERDOSAGE** Since the action of sustained release products may continue for as long as 12 hours, treatment of overdoses directed at reversing the effects of the drug and supporting the patient should be maintained for at least that length of time. Saline cathartics are useful for hastening evacuation of unreleased medication. In children and infants, antihistamine overdosage may produce convulsions and death.

**ADVERSE REACTIONS** Hypersensitivity reactions such as rash, urticaria, leukopenia, agranulocytosis, and thrombocytopenia may occur. Other adverse reactions to Ru-Tuss Tablets may be drowsiness, lassitude, giddiness, dryness of the mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, tachycardia, hypotension/hypertension, faintness, dizziness, tinnitus, headache, incoordination, visual disturbances, mydriasis, xerostomia, blurred vision, anorexia, nausea, vomiting, diarrhea, constipation, epigastric distress, hyperirritability, nervousness, dizziness and insomnia. Large overdoses may cause tachypnea, delirium, fever, stupor, coma and respiratory failure.

**DOSAGE AND ADMINISTRATION** Adults and children over 12 years of age, one tablet morning and evening. Not recommended for children under 12 years of age. Tablets are to be swallowed whole.

### HOW SUPPLIED:

Bottles of 100 Tablets  
Bottles of 500 Tablets

Federal law prohibits dispensing without prescription.

NDC 0524-0058-01  
NDC 0524-0058-05

# COUGH

## RU-TUSS<sup>®</sup> EXPECTORANT

### DESCRIPTION

Each fluid ounce of Ru-Tuss Expectorant contains:

Codeine Phosphate	65.8 mg
<b>(WARNING: MAY BE HABIT FORMING)</b>	
Phenylephrine Hydrochloride	30 mg
Phenylpropanolamine Hydrochloride	20 mg
Pheniramine Maleate	20 mg
Pyrilamine Maleate	20 mg
Ammonium Chloride	200 mg
Alcohol	5%

Ru-Tuss Expectorant is an oral antitussive, antihistaminic, nasal decongestant and expectorant preparation.

**INDICATIONS AND USAGE** Ru-Tuss Expectorant is indicated for symptomatic relief of upper respiratory congestion associated with pharyngitis, tracheitis, bronchitis, and allergic rhinitis. Also, for the temporary relief of symptoms associated with hay fever, allergies, nasal congestion and cough due to the common cold.

**CONTRAINDICATIONS** Hypersensitivity to antihistamines. Concomitant use of an anti-hypertensive or antidepressant drug containing a monoamine oxidase inhibitor is contraindicated.

Ru-Tuss Expectorant is contraindicated in patients with glaucoma, bronchial asthma and in women who are pregnant.

**WARNINGS** Ru-Tuss Expectorant contains codeine phosphate, therefore, the patient should be warned of the potential that this drug may be habit forming. Ru-Tuss Expectorant may cause drowsiness. Patients should be warned of the possible additive effect caused by taking antihistamines with alcohol, hypnotics, sedatives and tranquilizers.

**PRECAUTIONS** Patients taking Ru-Tuss Expectorant should avoid driving a motor vehicle or operating dangerous machinery (See Warnings). Caution should be taken with patients having hypertension, diabetes, hyperthyroidism and cardiovascular disease. Caution should also be used in patients with pulmonary, hepatic or renal insufficiency.

**ADVERSE REACTIONS** Ru-Tuss Expectorant may cause drowsiness, lassitude, giddiness, dryness of mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, tachycardia, hypotension/hypertension, faintness, dizziness, tinnitus, headache, incoordination, visual disturbances, mydriasis, xerostomia, blurred vision, anorexia, nausea, vomiting, diarrhea, constipation, epigastric distress, hyperirritability, nervousness and insomnia. Overdoses may cause restlessness, excitation, delirium, tremors, euphoria, metabolic acidosis, stupor, tachycardia and even convulsions.

**DOSAGE AND ADMINISTRATION** Adults: 1 or 2 teaspoonfuls, orally, every 4 hours, not to exceed 10 teaspoonfuls in any 24-hour period.

Children 6 to 12 years of age: ½ the adult dose, not to exceed 6 teaspoonfuls in any 24-hour period. Children 2 to 6 years of age: ½ teaspoonful every 4 hours, not to exceed 3 teaspoonfuls in any 24-hour period. Children under 2 years of age: Use as directed by a physician.

### HOW SUPPLIED

Pint bottles (16 fl. oz.)

Federal law prohibits dispensing without prescription.

NDC 0524-1010-16

### DISTRIBUTED BY:

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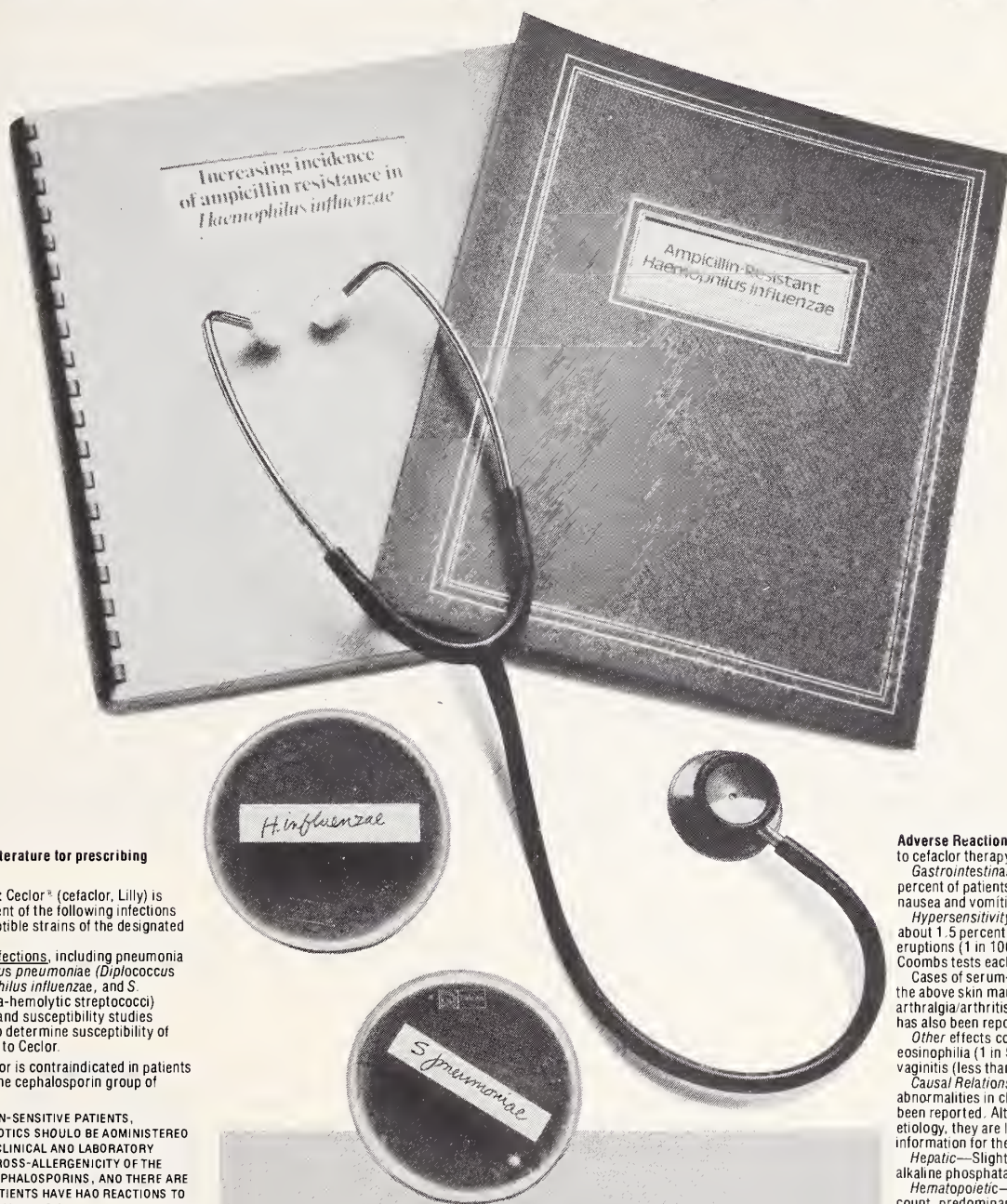


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Pioneers in Medicine For the Family



# An added complication... in the treatment of bacterial bronchitis\*



**Brief Summary.** Consult the package literature for prescribing information.

**Indications and Usage:** Cefclor® (cefclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

**Lower respiratory infections,** including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci). Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cefclor.

**Contraindication:** Cefclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

**Warnings:** IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS TO BOTH DRUG CLASSES (INCLUDING ANAPHYLAXIS AFTER PARENTERAL USE).

Antibiotics, including Cefclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

**Precautions:** If an allergic reaction to cefclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of cefclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs test may be due to the drug.

Cefclor should be administered with caution in the presence of markedly impaired renal function. Under such a condition, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Cefclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

**Usage in Pregnancy—**Although no teratogenic or antifertility effects were seen in reproduction studies in mice and rats receiving up to 12 times the maximum human dose or in ferrets given three times the maximum human dose, the safety of this drug for use in human pregnancy has not been established. The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus.

**Usage in Infancy—**Safety of this product for use in infants less than one month of age has not been established.

**Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis\*—are sensitive to treatment with Cefclor.<sup>1-6</sup>**

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Cefclor.<sup>7</sup>

## Cefclor®

### cefclor

Pulvules®, 250 and 500 mg

**Adverse Reactions:** Adverse effects considered related to cefclor therapy are uncommon and are listed below: **Gastrointestinal** symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70) and nausea and vomiting (1 in 90).

**Hypersensitivity** reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions, including the above skin manifestations, fever, and arthralgia/arthritis, have been reported. Anaphylaxis has also been reported.

**Other** effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

**Causal Relationship Uncertain—**Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

**Hepatic—**Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

**Hematopoietic—**Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

**Renal—**Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

[103080R]

\*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.<sup>8</sup>

**Note:** Cefclor® (cefclor) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

#### References

1. Antimicrob. Agents Chemother., 8:91, 1975.
2. Antimicrob. Agents Chemother., 11:470, 1977.
3. Antimicrob. Agents Chemother., 13:584, 1978.
4. Antimicrob. Agents Chemother., 12:490, 1977.
5. Current Chemotherapy (edited by W. Siegenthaler and R. Luthy), 11: 880. Washington, D.C.: American Society for Microbiology, 1978.
6. Antimicrob. Agents Chemother., 13:861, 1978.
7. Data on file, Eli Lilly and Company.
8. Principles and Practice of Infectious Diseases (edited by G. L. Mandell, R. G. Douglas, Jr., and J. E. Bennett), p. 487. New York: John Wiley & Sons, 1979.



Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285  
Eli Lilly Industries, Inc., Carolina, Puerto Rico 00630

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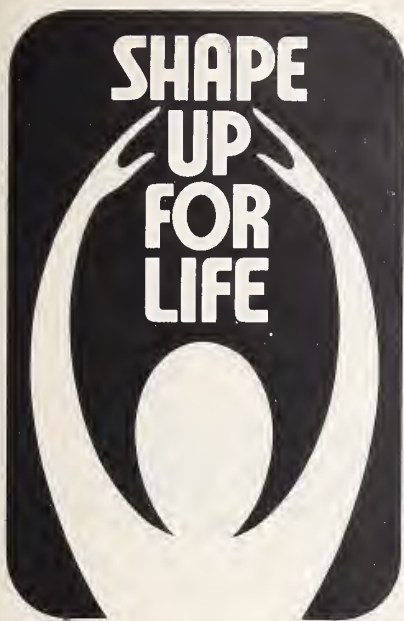
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535 N. Dearborn St., Chicago, IL 60610

## A U X I L I A R Y N E W S

### *An Open Letter to Kansas Physicians*

*Ed. Note:* Mrs. Betty Moore, Auxiliary President, has relinquished her space in this month's *Journal* so that Dr. Waxman may explain the utilization of AMAERF funds at the local level.

I am again grateful for the opportunity to describe activities in the School of Medicine at the University of Kansas Medical Center that are supported by the AMAERF funds. I would also like to express our great appreciation to the Auxiliary for their continuing contribution of these funds.

The School of Medicine has an enrollment of nearly 800 with women students constituting 26 per cent of the total enrollment. The level of preparation of our incoming students and the academic challenges they meet are higher than ever. When they graduate, more and more students are choosing to establish practices in the Kansas communities that most need their services.

AMAERF funds are used to support a variety of medical student activities such as student organizations, faculty-student interaction, student functions, student recreation, and student counseling.

Student organizations play a significant role on this campus, serving not only as forums to discuss problems, but also as valuable sources of feedback

about the quality of instruction and as organizers of special seminars with guest speakers. Some of these organizations are the Medical Student Assembly, the Student National Medical Association, and the American Medical Women's Association. Travel by representatives of these organizations to national meetings, and special functions such as the annual White Knight's Ball for all medical students and faculty, are possible through the AMAERF funds.

Faculty-student interaction in a non-academic setting continues to provide positive feedback with periodic breakfast and luncheon meetings and a graduation brunch at the Spencer House. These activities are supported by AMAERF funds.

Student functions which benefit from AMAERF funds are class parties, an annual student picnic, a holiday party in December, refreshments at orientation, and special faculty and student awards at commencement ceremonies. In addition, AMAERF funds have reinforced the vital area of research which is encouraged by an annual Student Research Day with presentations by medical students and visiting scholars.

Because of the absence of a much needed recreational facility for our students, AMAERF funds help to support activities such as volleyball, basketball, baseball, and swimming. YMCAs and school gymnasiums are rented for use by our students for these sports activities.

A volunteer student counseling service composed of faculty and staff is available to help students with personal problems not associated with their academic programs. AMAERF funds have contributed to the activities of this support group.

In summary, AMAERF funds are vitally important in the support of these many activities which help to make student life at the University of Kansas School of Medicine enjoyable. These activities would not be possible without the support and contributions of the Auxiliary and the Kansas physicians.

*David K. Waxman, M.D.,*

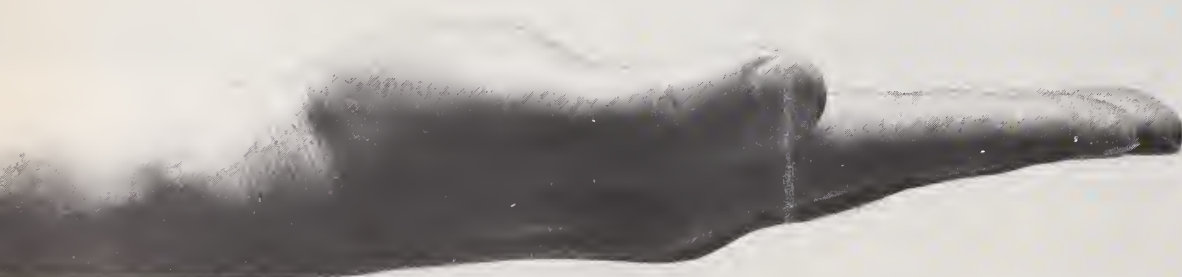
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**Austin J. Adams, M.D.**, 70, Wichita, Baylor University School of Medicine 1936, died December 31, 1980.

---

**Homer L. Bryant, M.D.**, 81, Coffeyville, Columbia University School of Medicine 1930, died December 12, 1980.

---

**Robert M. Daugherty, M.D.**, 72, Meade, University of Kansas School of Medicine 1936, died October 30, 1981.

---

**William H. Kendal, M.D.**, 35, Gardner, Kansas City College of Osteopathic Medicine 1976, died October 18, 1981.

---

**James W. Shaw, M.D.**, 83, Wichita, Rush Medical College 1927, died November 16, 1981.

---

**Robert Sohlberg, Jr., M.D.**, 75, McPherson, Northwestern University School of Medicine 1934, died February 22, 1981.

---

**L. Barrick Wilson, M.D.**, 72, Shawnee Mission, University of Kansas School of Medicine 1935, died October 15, 1981.

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### Manuscript Preparation

Manuscripts must be typewritten, double spaced leaving wide margins. Submit the original, plus one copy if possible.

*Titles* should be short, specific, and amenable to indexing. A subtitle if frequently used to keep the main title short.

*Summary:* all manuscripts should include a short abstract which is a factual (not descriptive) summary of the work.

*Author Responsibility:* the author is responsible for all statements made in his work, including changes made by the copy editor. Manuscripts are received with the explicit understanding that they are not simultaneously under consideration by any other publication. Publication elsewhere will be subsequently authorized at the discretion of the Editor.

*Galley Proof:* To make extensive changes in the article after the text has been set in type may require an additional cost which exceeds the original. The galley proof is for correction of ERRORS, and a rewriting of the article should be done on the original copy BEFORE it is submitted for publication.

*Drugs* should be called by their generic names; the trade names can be added in parentheses if they are considered important. All units of measure must be given in the metric system.

### References

Bibliographic references should not exceed 20 in number, documenting key publications. Personal communications and unpublished data should not be included. References should be arranged according to the order of citation, and not alphabetically. All references must be numbered consecutively and all must be cited in the text. Use the style of the AMA publications, giving: name of author, title of article, name of periodical, volume, pages, year.

### Illustrations

All material which cannot be set in type, such as photographs, line drawings, graphs, charts, tracings (for preparation of tables, see below) must be mounted on white cardboard. All must be identified on the back as to figure number, author's name, and an arrow indicating top. Legends should be typed double spaced on a separate sheet of paper, limited to a maximum of 30 words.

*Drawings and Graphs* should be done professionally in India ink on illustration board or high grade white drawing paper.

*Photographic* material should be submitted in duplicate as high contrast, glossy prints. Color illustrations will be accepted for publication only if the author assumes the cost.

THE JOURNAL will assume the cost of B/W engravings and cuts up to \$35 (or 5 cuts). Engraving cost for illustrations in excess of \$35 will be billed to the author.

### Tables

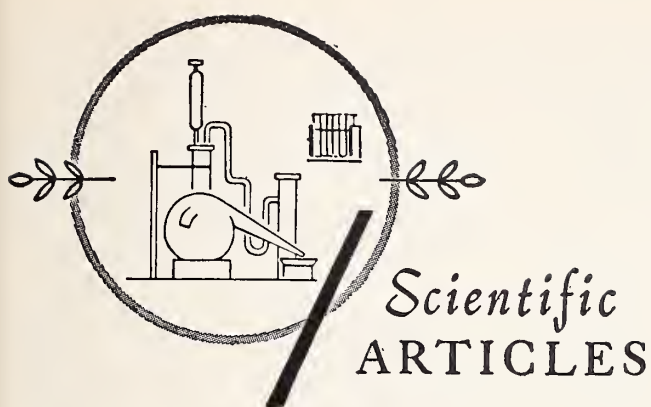
Because tables are set by hand, their cost is comparable to illustrations. A reasonable number of tables are allowed without cost to the author.

Tables should be self-explanatory and should supplement, not duplicate, the text. Since the purpose of a table is to compare or classify related items, the data must be logically and clearly organized. The relationship and comparison are established by the correct choice of column heads (captions of vertical columns) and stubs (left entries in horizontal listings).

Each table should be typed double spaced, including all headings, on separate sheets of lettersize paper. Oversize paper should not be used. Instead, repeat heads and stubs on a second sheet for tables requiring extra width. Number tables consecutively. Each table must have a title.

### Reprints

A reprint order form with a table covering cost will be sent with the galley proof to each contributor. Since the JOURNAL has no way to provide for reprints, they must be ordered by the author and purchased directly from the printer.



# A Team Concept

## *Helping the Diabetic Patient Through Surgery*

G. WILLIAM NICE, M.D.; BETTE WATSON, R.N., M.S. and  
STEVE CLIFTON, C.R.N.A., Topeka

THE PATIENT with diabetes who requires surgery has a higher mortality rate than the nondiabetic patient. With improvement in anesthesia, careful regulation of diet, controlled monitoring of insulin therapy, fluid and electrolyte therapy, the surgical mortality rate of the diabetic patient should approach that of the nondiabetic. This will require careful preoperative, operative, and postoperative management by the medical team consisting of internist, surgeon, anesthetist, diabetes nurse clinician or floor nurse, and dietitian. The medical management plan can be divided into three areas: preoperative, operative, and postoperative.

### Before Surgery

Each diabetic patient should be admitted at least two days prior to surgery so s/he can adjust to hospital routine and the medical team can do a proper evaluation. The preoperative history and results of the physical examination should be on the chart before surgery. A careful past history includes all medical and surgical disease, but special attention should be given to the course of the diabetes, including the type and duration. The new classification of diabetes defines two types: type I, formerly known as juvenile onset or insulin-dependent; and type II,

adult onset, usually non-insulin dependent, often diet controlled, but possibly requiring insulin or oral medication currently or in the past. The diabetes may be stress related diabetes due to surgery, frac-

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**The surgical mortality rate is higher for the diabetic than for the nondiabetic patient. Medical team management that addresses diabetic risk factors before, during, and after surgery can effect a near-normal surgical prognosis for the diabetic patient.**

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ture, or starvation. The diabetes may result from high blood sugar due to pregnancy, obesity, infection, birth control pills, liver disease, intravenous fluids, and may not be diabetes at all. Diagnosis of diabetes is sometimes difficult, but usually is confirmed by a fasting blood sugar level greater than 140 mg/100 ml and a two-hour postglucola greater than 200 mg/100 ml in a person on a relatively normal diet without stress, severe obesity, or pregnancy. The amount and frequency of insulin or oral medication should be noted.

Symptoms of diabetes such as thirst, polyuria, itching, past or present infections, weight loss, fatigue, weakness, severe abdominal distress, and peripheral neuritis should be noted. Any vascular complications of brain, eyes, cardiovascular system, kidneys, extremities; any episodes of ketoacidosis or insulin shock; and frequency and duration of these

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symptoms should also be recorded, as well as past surgery, including amputations.

A careful history of the present condition should be investigated. Is the patient's diabetes diet controlled, or is medication required? Does the patient stay on an appropriate diet and take prescribed medication? If insulin is required, what kind or kinds? How much and how often? Are there any complications involving the feet, or any recent memory changes, neuritis, history of strokes, or eye changes requiring cataract or laser treatment?

Preoperative study should include careful laboratory investigation. Blood sugar should be measured the day before surgery and the morning of surgery. Blood gases, especially carbon dioxide, must be checked and, if abnormal, treatment given to return them to normal before surgery. Electrolytes, especially potassium, should be measured and repeated several times if abnormal or if the patient is a brittle diabetic with a past history of ketoacidosis. An electrocardiogram is necessary if the patient is older than 30 years or has had diabetes for more than five years. It is well to remember that "the vascular age is the real age plus the number of years that the patient has had diabetes." The hemoglobin A<sub>1</sub>C value is useful if there is some suspicion that the patient has not been well controlled. If it is elevated, then control has not been good for at least three months. A complete blood count and chemistry profile are very useful. Anemia, if present, should be corrected. A urine culture is necessary if there is a history of previous urinary tract infections. Due to differences in renal threshold levels, blood sugars are more reliable than urine sugar to evaluate the patient's status. Pulmonary function studies are helpful if chronic lung disease is manifested.

The clinical condition of the patient must be carefully evaluated and anything abnormal — such as elevated blood pressure, abnormal EKG, acidosis, elevated blood sugar, urinary infections, or dehydration — must be corrected prior to surgery. A hospital diet should include 150-225 gm carbohydrate/day with enough insulin to keep the diabetes under control. Adequate protein, minerals, and vitamins are also necessary. In diabetics with a poor dietary history, supplemental vitamins are necessary. If the patient is dehydrated, adequate fluids should be given the day before surgery. If the patient is taking oral medication, tolbutamide (Orinase) should be discontinued at least 24 hours before surgery, acetohexamide (Dymelor), chlorpropamide (Diabinese), and tolazamide (Tolinase) should be discontinued at least two days before surgery. The blood sugar may be slightly elevated — 150-200

mg/100 ml is considered acceptable and is preferable to low levels, *i.e.* below 70 mg/100 ml.

Surgery should be scheduled for morning if possible.<sup>1</sup> Laboratory service is readily available, nursing units are usually better staffed, the patient will be awake and probably taking fluids and food before night, and the patient is generally easier to manage.

Intravenous fluids should be started by early morning. If the patient has been receiving oral medication, usually no insulin is required. If the patient has been receiving insulin, up to one-half to two-thirds of the daily dosage of insulin should be given about 7 AM, and 5 per cent dextrose and saline or lactate Ringer's solution should be started immediately. Some physicians prefer to give regular insulin in the intravenous fluids by slow drip and a smaller amount of the longer acting insulin (NPH or lente) subcutaneously. Each physician will establish a preferred procedure; however, small doses are usually better to prevent hypoglycemia.

A fasting blood sugar test should be done on the morning of surgery, and carbon dioxide and potassium levels rechecked if they have been abnormal. If blood sugar, potassium and carbon dioxide levels are not corrected, surgery should be postponed except in extreme emergencies.

Basic patient education should begin prior to surgery if at all possible. The basics include diet, insulin (if used), acute complications, behavior, exercise, urine testing, enjoyment, and self. Diabetes may be basic, but each individual is unique, and needs must be met on the personal level. Needs vary depending on the patient's understanding of the medical condition and its terminology, attitudes toward health and illness, treatment routine, and social and cultural variations in response to illness. The patient's attitude toward physicians, nurses, and other health professionals will affect his acceptance. The patient and family should be included in all plans for his health.

Nursing education will depend upon whether the surgery is minor or major, and on the physician's preference for treating diabetes. Another important factor to consider is mild diabetes, when the procedure may cause little change in the daily management of the diabetes. The moderate diabetic may require half of his daily dose of insulin, given in the form of rapid acting insulin, and managed with intravenous fluids. The severe (or brittle) diabetic must have close metabolic monitoring during hospitalization. Preoperative teaching should include a visit to the operating room and recovery room; an explanation of the possibility of an indwelling catheter.



ter or other drainage tubes; the reasons for turning, coughing, and deep breathing; and close monitoring of vital signs, urine, and blood levels. The nursing assessment includes the physical, psychological, and emotional needs of the individual with adequate documentation.

The alcoholic diabetic or the patient who smokes should be carefully checked for disease of heart, lungs, brain, skin, liver, and other complications. The diabetic who smokes should be asked to discontinue smoking for at least one week before and one week after surgery. Incentive spirometry, assisted ventilation, or other forms of respiratory therapy may be necessary.

### **During Surgery**

Before the patient has been given anesthesia, the anesthesiologist should review the chart to see if the chemistries have been corrected. The type of anesthesia should be decided before the patient has been brought to the operating room. Spinal anesthesia has been recommended in many patients, but the anesthesiologist should determine which anesthetic is best for each patient.<sup>2</sup>

Intravenous fluids should be checked and the amount of insulin given that morning should be on the record. The most recent blood sugar level (preferably determined within two to four hours before surgery) should be noted. If no insulin has been given, it is not necessary to give 5 per cent glucose intravenously. However, intravenous saline or lactate Ringer's solution should be given. When 5 per cent glucose is given intravenously, some physicians prefer to put 10-20 units of regular insulin in the intravenous fluids. If insulin has been placed in the intravenous fluids, the patient should be closely observed for signs of hypoglycemia during anesthesia. These may include a pounding "water hammer" pulse, a decrease in diastolic blood pressure, sweating, and tachycardia.<sup>3</sup> If insulin is given intravenously during surgery for high blood sugar, it is important to remember that a small dose is better than a large dose. Insulin has a half-life of about nine minutes<sup>4</sup> and it acts quickly, so frequent blood sugar tests are usually necessary. It is seldom advisable to give intravenous bolus insulin during surgery since hypoglycemia may result. Hypoglycemia is more dangerous than hyperglycemia,<sup>4</sup> so if in doubt, more glucose should be administered.

If the patient is a brittle diabetic and the surgery will last longer than one or two hours, the blood sugar level should be checked every hour during and for at least four hours after surgery. If the diabetes has been stable and under reasonable control, a

blood sugar examination every two hours during and every two to four hours following surgery until stable will be satisfactory. If the blood sugar level remains lower than 200 mg/100 ml, no additional insulin is necessary during surgery. If the blood sugar level rises above 300 mg/100 ml, 5-10 units of regular insulin may be given subcutaneously.

Nurses in surgery and in the recovery phase must be aware of the kind of insulin used as well as the manifestations of elevated or lowered blood sugar levels. Careful documentation of body fluid loss from bleeding, emesis, perspiration, and urinary output is important. With loss of body fluids, electrolyte imbalance ensues. Fluid replacement is based on laboratory results, cardiac status, and other factors which should be monitored every two to four hours. Delayed awakening may indicate hypoglycemia.

### **After Surgery**

The blood sugar level should be checked at least once during the time the patient is in the recovery room and then every two to four hours after leaving the recovery room for eight hours following surgery, or until the blood sugar level stabilizes; then once or twice daily is sufficient.

When the patient is able to swallow, fluids and food should be started. If less than 50 per cent of the usual daily dose of insulin was given prior to surgery, another 25-50 per cent may be necessary four to six hours after surgery if the patient has responded and has started taking fluids and food. On the day after surgery, fasting blood sugar level should be determined and the usual dose of insulin should be given if the patient has started taking fluids and food. Small doses of rapid acting insulin may be necessary to help control the blood sugar level and may be given subcutaneously or occasionally in the intravenous fluids.

If there has been infection, neuropathy, or circulatory problems prior to surgery, the blood sugar level usually has been greater than 200 mg/100 ml, and patients with such conditions should be watched more closely after surgery. More than one-half of the diabetic admissions for surgery are for disease of the lower extremities, and these are frequently infected and gangrenous.

The dietitian and the diabetes nurse clinician or floor nurse should begin education before surgery if possible, or on the first or second postoperative day, for the patient and family. This should include diet instructions, urine testing, an exercise program, and general diabetes education.

The primary goal is a stable patient; this requires



physical, psychological, and emotional evaluations. The basic evaluations include monitoring of: intake and output; dressings for type and kind of drainage; urinary catheter (and other tubes) for patency and drainage; intravenous and oral fluids; pain control; urine tests for glucose and ketones; and possible rise or fall of blood sugar levels. Just as important as observation is the proper accurate documentation of these findings.

The Somogyi effect due to the use of insulin should be mentioned. This is a rebound effect: After the patient has had a low blood sugar level, s/he will have a high one. This may occur if the patient has been given too much insulin when the blood sugar level is high, causing serum levels to drop very low initially and then to rise later. This may occur with the severe (brittle) diabetic.

Frequently a diabetic who is ill does not feel like eating, and it is assumed that less insulin is needed. This is a myth since the liver still manufactures glucose. Daily insulin requirements may be increased during the immediate postoperative phase, especially if infection is present. During periods of stress — which can include acute illness, surgery, infection, accidents, pregnancy, or emotional and family problems — the dosage may need close monitoring.

Teaching can continue with every procedure or visit the nurse makes with the patient or family. Even long standing diabetics can learn newer procedures or be reminded of better methods of postoperative self-care. Family members or significant others should be included in these teaching sessions.

### Outpatient Surgery

If the patient has diabetes that requires oral medication or a small dosage of insulin, surgery should be scheduled in the morning and the usual dosage of medication should be given after surgery when he is awake and ready to eat. If the patient requires 20 units or more of insulin, 10 units should be given before and 5 per cent glucose intravenously should be started at the same time. The rest of the usual dosage of insulin can be given when the patient is awake and ready to eat. With the use of local anesthesia, the patient can usually take the daily dose of oral medication or insulin and eat a light breakfast which includes 30-50 gm carbohydrate. However, the anesthetist may prefer to hold the insulin and food until after surgery because the patient may vomit or may require general anesthesia.

### Summary

The patient with diabetes who is admitted to the hospital for surgery deserves a careful diabetes history, laboratory study with a chemistry profile that includes blood sugar level, as well as blood gases, EKG, and chest x-ray. S/he should be checked carefully for complications. Careful monitoring of blood sugar determinations help control and should improve the mortality and morbidity rates to approach those of the nondiabetic. The team concept improves patient knowledge during hospitalization and following discharge.

### References

1. Hamburger, Stephen: Medical management of the surgical patient with diabetes. *J. Am. Med. Wom. Assoc.* 34(4):155-167, 1979.
2. Churchill-Davidson, H. D.: *A Practice of Anesthesia*, 4th edition. Philadelphia, Saunders, pp. 1274-1284, 1978.
3. Collins, V. J.: *Principles of Anesthesiology*, 2nd edition. Philadelphia, Lea P. Febiger, pp. 205-206, 1976.
4. Dripps, R. D.: *Introduction to Anesthesia: The Principles of Safe Practice*, 5th edition. Philadelphia, Saunders, pp. 30-31, 1977.

An additional list of suggested reading is available from the author.

## Practice in Living

**At the request of the Impaired Physicians Committee of the Kansas Medical Society, space has been made available in the *Journal* for a section featuring articles relating to concerns and problems unique to the lifestyle of the physician. Articles may focus on communication, stress and distress, responsibilities to self, medical marriage, recreation and leisure, and related topics. Manuscripts or suggested topics and questions are solicited and should be submitted to:**

### Editor

**The Journal of the Kansas  
Medical Society  
1300 Topeka Avenue  
Topeka, KS 66612**

# Isoniazid Toxicity

## *Pyridoxine Controlled Seizures in a Dialysis Patient*

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ISONIAZID (INH) is the cornerstone of antituberculous therapy; however, its efficacy may be limited by its toxicity. This is manifested either by hepatic impairment due to the drug itself, or by neurologic alterations due to pyridoxine (B<sup>6</sup>) deficiency.

Presented here is a case of isoniazid-induced seizures occurring in an adult and refractory to phenytoin and diazepam, but responsive to parenteral pyridoxine.

### Case Report

A 59-year-old Vietnamese female on chronic hemodialysis was admitted November 14, 1977, with right upper quadrant pain. The pain awakened her, resolved after three hours, and was associated with emesis of black material and passage of black diarrheal stools with a "red tinge." The pain recurred later in the day during dialysis, and necessitated admission.

Physical examination disclosed blood pressure, 200/100; pulse, 76/min; and temperature, 37°C. Abdominal examination revealed right upper quadrant tenderness without rebound. The liver was enlarged with a span of 12 cm. Rectal examination revealed black, guaiac positive stool.

The patient's medications included isoniazid, 300 mg/day; ethambutol, 200 mg/day; pyridoxine, 100 mg/day; and multiple vitamins and aluminum hydroxide. The latter two had been started in June 1976, concurrently with dialysis. The antituberculous medications were started in February 1977 when fever and a right hilar mass necessitated admission. An intermediate strength PPD was positive, cultures for the tubercle bacillus showed no growth, and no tumor cells were seen. All symptoms resolved during therapy.

She again was admitted in June 1977 for evaluation of confusion, headbobbing, and involuntary movements. Glucose, cell count, electrolytes, spinal fluid, EEG, and CT scan were normal, and the

symptoms resolved without therapy. She was discharged on the same medications to be administered by French-speaking Catholic nuns with whom she had been residing.

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**A complication of renal dialysis is seizures. A 59-year-old female on chronic dialysis was admitted with acute onset of tonic-clonic seizures thought to be isoniazid-induced. Parenteral pyridoxine was administered with symptom resolution.**

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On the evening of the current admission at 6:30, and again at 10:00, the patient had tonic-clonic seizures followed by postictal somnolence. STAT laboratory values were as follows: Na, 134 mEq/l; K, 4.1 mEq/l; Cl, 96 mEq/l; CO<sub>2</sub>, 18 mEq/l; Ca, 9.6 mg/dl; P, 6.3 mg/dl; BUN, 61 mg/dl; Mg, 2.4 mEq/l; and glucose, 90 mg/dl. Physical examination revealed no abnormalities. Blood and urine cultures were obtained.

The next morning the patient's lethargy persisted. She refused all medications and had intermittent seizure-like movements of the upper extremities. Her temperature was 38.8°C. Lumbar puncture opening and closing pressures were 19 cm H<sub>2</sub>O with clear fluid. *E. coli* was isolated from the urine and she was started on ampicillin, 500 mg/six hours, and phenytoin, 300 mg, both intravenously.

Intermittent seizures refractory to phenytoin and diazepam persisted on the third hospital day. In view of the language barriers between the patient, her physicians and her guardians, medication administration error with isoniazid toxicity was considered, and pyridoxine, 1,500 mg, was administered intravenously during dialysis. The tonic-clonic movements decreased and an additional 1.0 gm pyridoxine was given intramuscularly after dialysis. By the following morning the patient was awake, alert, and ambulating.

Isoniazid toxicity is dose related with 1 percent of patients developing toxicity at doses of 3-5 mg/kg/day. Side effects include dry mouth, urinary retention, agranulocytosis, anemia, and niacin deficiency.

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cy. Severe toxicity is manifested by either hepatic or neurologic disease with symptoms dependent upon the acetylation properties of the patient.<sup>1</sup> Fast acetylation is autosomal dominant.<sup>2</sup> Fast acetylators excrete 94 per cent of isoniazid as acetylisoniazid which is further metabolized to acetylhydrazine and isonicotinic acid, whereas slow acetylators metabolize only 63 per cent in this manner. Fast acetylators are exposed to greater concentrations of the hepatotoxic metabolites, acetylisoniazid and acetylhydrazine,<sup>3</sup> while higher levels of potentially neurotoxic isoniazid persist in slow acetylators.<sup>1</sup>

Clinically, hepatotoxicity is manifested by transaminase elevations in 10 per cent of patients,<sup>4</sup> but only 1-2 per cent overall develop clinical liver disease.<sup>5</sup> Autopsies performed on patients with isoniazid neurotoxicity have shown optic tract demyelination and spinal cord gray matter alterations.<sup>6</sup> Clinically, seizures and peripheral neuritis responsive to pyridoxine have been seen. The therapeutic response is due to correction of a true pyridoxine deficiency developing during isoniazid metabolism.<sup>7</sup> Isoniazid and pyridoxine form an isonicotinylhydrazone of pyridoxine which is excreted in the urine and, without replacement, pyridoxine deficiency results.<sup>8</sup> The pyridoxine dependent reaction involving decarboxylation of glutamic acid is blocked, resulting in a deficiency of glutamine aminobutyric acid (GABA) in the central nervous system. The inhibitory neurotransmitter effects of GABA are lost, resulting in seizures<sup>9</sup> and other neurologic manifestations.<sup>1</sup> The mortality rate ranges from 19-21 per cent.<sup>10, 11</sup>

Both chronic and acute overdose require parenteral pyridoxine hydrochloride in a dose of 1 gm of pyridoxine/gm of isoniazid ingested, repeated in 30

minutes if necessary. Since isoniazid is not protein bound, diuresis with furosemide and mannitol, or dialysis, can be considered. Acidosis is treated with sodium bicarbonate.<sup>7</sup>

The current case is representative of the acute onset of neurotoxicity in an adult on chronic isoniazid therapy. Seizures presumably resulted from a toxic level with inadequate pyridoxine replacement. The patient's previous admission for confusion probably resulted from isoniazid toxicity which was reversed by controlled dialysis and resumption of a proper drug dosage schedule. Nervous system toxicity due to isoniazid is reversible by parenteral pyridoxine as demonstrated by this case report.

## References

1. Goldman, A. L. and Braman, S. S.: Isoniazid: A review with emphasis on adverse effects. *Chest* 62(1):71-77, 1972.
2. Evans, D. A. P.; Manley, K. A. and McKusick, V. A.: Genetic control of isoniazid metabolism in man. *Br. Med. J.* 2(5197):485-491, 1960.
3. Mitchell, J. R. *et al.*: NIH Conference: Isoniazid liver injury: Clinical spectrum, pathology, and probable pathogenesis. *Ann. Intern. Med.* 84:181-192, 1976.
4. Scharer, L. and Smith, J. P.: Serum transaminase elevations and other hepatic abnormalities in patients receiving isoniazid. *Ann. Intern. Med.* 71:1113-1120, 1969.
5. Black, M. *et al.*: Isoniazid-associated hepatitis in 114 patients. *Gastroenterology* 69(2):289-302, 1975.
6. Goldfrank, L. and Osborn, H.: INH toxicity. *Hosp. Physician* 13(10):32-35, 1977.
7. Sievers, M. L. and Herrier, R. N.: Treatment of acute isoniazid toxicity. *Am. J. Hosp. Pharm.* 32(2):202-206, 1975.
8. Biehl, J. P. and Vilter, R. W.: Effects of isoniazid on pyridoxine metabolism. *JAMA* 156:1549-1552, 1954.
9. Wood, J. D. and Peesker, S. J.: The effect on GABA metabolism in brain of isonicotinic acid hydrazide and pyridoxine as a function of time after administration. *J. Neurochem.* 19:1527-1537, 1972.
10. Brown, C. V.: Acute isoniazid poisoning. *Am. Rev. Respir. Dis.* 105(2):206-216, 1972.

**Letters to VOX DOX should be addressed to the Vox Dox Editor, Journal of the Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612.**

# Adriamycin Toxicity

## *Effects in Subsequent Anesthesia and Surgery*

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ADRIAMYCIN is a cytotoxic antibiotic which has been successfully used to produce regression in a wide variety of neoplastic conditions. Although several unpleasant side effects of this drug are known to exist, special attention must be given to the cardiac toxicity exhibited by Adriamycin. This undesirable effect on the heart is directly related to the total dose of the drug administered. Changes in the pre-ejection period to left ventricular ejection time ratio have been reported to appear with doses of Adriamycin greater than 400 mg/m<sup>2</sup>.<sup>2</sup> It has been recommended that the total dose of Adriamycin not exceed 550 mg/m<sup>2</sup> of body surface.

The amount of damage to the myocardium secondary to Adriamycin treatment can be evaluated by various means. One of these means includes a phonocardiogram which more specifically measures the systolic time interval pre-ejection period to left ventricular ejection time ratio. Other tests are percutaneous right ventricular needle biopsy, cardiac catheterization, electrocardiography, and echocardiography. These tests can measure within 90 degrees accuracy the degree of damage to the myocardium following Adriamycin toxicity. There is not complete agreement as to which of the above mentioned tests is the best for assessing the degree of damage to the heart muscle. Nevertheless, it is agreed that Adriamycin will cause cardiomyopathy. The clinician should be aware of this fact. Adriamycin produced cardiomyopathy is diffuse in nature. There is a decrease in the QS voltage of the electrocardiogram. Cardiac dilatation and ventricular failure may occur rapidly in the heart muscle requiring refractory inotropic drugs and mechanical ventricular systems. Autopsy specimens of hearts examined following treatment with Adriamycin showed a striking decrease in the number of cardiac muscle cells present. The remaining viable cells had myocardial loss, loss of contractual substance, and myocardial swelling in innermyocardial dense inclusion bodies.

### Case Reports

*Case One:* A 66-year-old female was diagnosed as having primary cancer of the breast in 1973. At that time she had a radical mastectomy and radiation therapy. Later she was found to have progression of the disease. She eventually was treated with Adriamycin, 75 mg every three weeks for a ten

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**Adriamycin is a chemotherapeutic drug, a side effect of which is cardiac toxicity. In patients who have received Adriamycin and are undergoing anesthesia, care must be taken since these patients are prone to some hypotension. A cardiogenic etiology is implied.**

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month period. She was admitted to the hospital in December 1978 with metastatic lesions of the left femur. She was taken to surgery where IM rodding of the left femur was done. During anesthesia she became hypotensive. Systolic pressure dropped to as low as 70 mm/Hg, and it was necessary to instill dopamine to maintain blood pressure. The hypotensive episode followed shortly after induction. She had no long term side effects from the anesthesia.

*Case Two:* A 68-year-old female had a radical mastectomy in 1968 for adenocarcinoma of the left breast. She was treated with various radiation and chemotherapy programs. She received Adriamycin in February and March of 1978. In late March she was admitted with a pathological fracture of the right hip. She was taken to surgery where Jewett nail and plate fixation of the right subtrochanteric hip fracture were done. Examination of the anesthesia record from that surgery shows that the patient's initial blood pressure was approximately 140/90 and then steadily decreased until it reached a low point of 80/50. At that time plasmanate was instilled. Slowly the patient's blood pressure was restored to acceptable levels. In retrospect, the use of plasmanate can be questioned. The increase in the circulating blood volume would tend to tax an already compromised heart.

*(Continued on page 574)*

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# Abdominal Gunshot Wounds

## *A Review From Low Volume Trauma Centers*

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SEVERAL PAPERS on gunshot wounds (GSW) of the abdomen have been published from major trauma centers.<sup>1-4</sup> However, we are aware of no comprehensive reports from hospitals in which a low volume is seen. Presented here are data relating to GSW of the abdomen from community hospitals dealing with a smaller number of cases. These results are compared to those from major trauma centers, and guidelines are suggested for improvement in management of this type of injury in community hospitals.

### Subject and Methods

This is a retrospective study of GSW of the abdomen in patients subsequently undergoing laparotomy in three private hospitals in Wichita. Wichita is a community with a metropolitan population of 305,000 situated in the south central portion of Kansas (Kansas Statistical Abstract, 1975). Charts were reviewed from 1968 through 1978 in the three community hospitals — St. Francis Hospital (SFH), St. Joseph Hospital (SJH), and Wesley Medical Center (WMC). The bed capacities of these hospitals, excluding bassinets, are 886, 439, and 717 respectively, totalling 2,042 (87%) of the city's 2,361 hospital beds (Hospital Guide Issue, 1976, American Hospital Association). Ninety-one cases (58%) were treated at SFH, 59 (37%) at WMC, and 8 (5%) at SJH.

The initial management of these cases differed from that in most major trauma centers. Private physicians or residents working for a salary staffed the emergency rooms. Many of these were non-surgeons. After evaluation and treatment initiated by the emergency room physician, a private surgeon or surgical resident on call was notified to assist in resuscitation and assume management of the patient. In some cases (especially in the later years of the

study) the surgical resident would be notified several minutes prior to arrival of the patient in the emergency room. There was no triage system or specific protocol for emergency room management of GSW of the abdomen in these emergency rooms during the

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**A ten-year review of 158 cases of abdominal gunshot wounds in Wichita community hospitals was performed, and factors such as shock on admission, single or multiple organ injuries, complications, and mortality and morbidity rates were compared with records from major trauma centers. The data obtained were used to establish guidelines for improvement in the management of such wounds in relatively low volume trauma centers.**

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time period of this study. The administration of fluids (colloid vs crystalloid) and other resuscitative efforts varied according to the discretion of the individual surgeon. Twenty-eight staff surgeons were involved in these cases. No trauma specialists were available during the time period of this study.

The medical records departments in the three hospitals have computerized records systems, and all charts coded as "GSW of the Abdomen" were reviewed in a prototype study.<sup>5</sup> A more complete review was obtained by searching the daily operating room logbook for the entire period. A total of 158 cases was collected. Patients with superficial injuries and those not undergoing laparotomy were excluded. A protocol sheet was developed and utilized by the authors to obtain data from each chart reviewed.

### Results

*Incidence:* Between 1968-78, an annual average of 14 patients with abdominal GSW were surgically treated. The staff surgeons involved in these cases managed 1-25 cases (average 5.6 cases) each. Males accounted for 127 cases (81%), with a disproportionate number of blacks (61). Eighteen white

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TABLE I  
TYPE OF WEAPON USED IN THIS SERIES

Weapon	Negative Laparotomy	Survivors with Organ Injuries	Fatalities (%)	Total (%)
Shotgun	2	14	5 (28%)	21 ( 13%)
Handgun	11	110	12 ( 67%)	133 ( 84%)
Rifle	<u>1</u>	<u>2</u>	<u>1 ( 5%)</u>	<u>4 ( 3%)</u>
	14	126	18 (100%)	158 (100%)

females (11%) and 13 black females (8%) comprised the remaining cases. The age range was 13-72 years, with an average of 30.4 years.

Most of the injuries were from handguns (*Table I*). A disproportionate number of deaths and more severe injuries resulted from shotgun wounds. Wounds from a rifle were fatal in 25 per cent of the cases, from a shotgun in 23 per cent, and from a handgun in 9 per cent. Nineteen patients (13.5%) had self-inflicted wounds, and two of these patients died. Accidental injuries were documented in 12 survivors (9%) with two fatalities (11%).

Hospital stay averaged 17 days for surviving patients with organ injuries and eight days for patients with a negative laparotomy. Four patients warranted special mention: one patient deserted on the fourth postoperative day; and three had extended hospitalization (> 120 days) for unusual reasons associated with their injuries (one psychiatric and two with problems associated with paraplegia from the GSW).

The data were then analyzed by dividing the patients into four groups: (1) negative laparotomy (14 cases); (2) fatality (18 cases); (3) survivors with shock on admission (32 cases); and (4) survivors without shock on admission (94 cases). Of the 14 patients with negative laparotomies, two were paraplegic from a GSW with spinal cord injury. There were no deaths and no morbidity in patients with negative laparotomy.

**Shock on Admission:** Shock on admission was defined by the reviewers as a systolic blood pressure lower than 80 mmHg associated with a tachycardia greater than 120/minute. Shock on admission was seen in 32 (23%) of the 140 survivors, while 15 (83%) of the fatalities exhibited shock on admission. Overall, 47 (30%) patients were in shock on admission, and 15 (32%) of these patients died.

Although the amount of crystalloid administered in the initial emergency room resuscitation was

poorly recorded in many cases, the amount of blood was well documented. More than twice as much blood was administered to each fatality compared to the patient arriving in shock who survived.

**Cause of Death:** The overall mortality rate was 11.4 percent, and 83 percent of fatalities were in shock on admission. Hemorrhage was the most common cause of death. An average of ten units of blood was administered to each fatality, and uncross-matched blood was recorded in two of these patients. Nine of 13 patients who died with hemorrhage expired on the operating table. The amount of blood transfused and the number of organ injuries did not differ significantly in these patients compared to patients who died from hemorrhage after a laparotomy had been performed. However, aortic or vena cava injuries were found in six patients who died from hemorrhage on the operating table. There were three survivors of aortic or vena cava injuries (mortality rate, 67%). A delay of 15-30 minutes was noted in three of five patients who arrived in the emergency room with no obtainable blood pressure. No facilities were available in the emergency rooms for performance of laparotomy.

All but two fatalities had three or more organ injuries (*Table II*). Five deaths occurred after the first 24 hours, and these patients had fewer organ injuries than the other fatalities. Sepsis was the most frequent late cause of death, and colon penetrations were found in all cases of fatal sepsis. All colon resections or repairs were protected by colostomy. Sepsis occurred in these cases when there was marked fecal soiling and multiple organ injuries, particularly large vessel injuries.

**Time of Transfer:** There is no comparable data available against which to judge these results. The elapsed time between admission of the patient to the emergency room and transfer to the operating room ranged from 5-170 minutes (average 57 minutes) for fatalities, and 58-360 minutes (average 180) for pa-



TABLE II  
NUMBER OF ORGANS INJURED BY GSW

# Organs	Fatalities (N = 18)	Survivors with Shock on Admissions (N = 32)	Survivors without Shock on Admission (N = 108)	Total (%) (N = 158)
0	—	—	14 (13%)	14 ( 9%)
1	—	3 (10%)	42 (37%)	45 (28%)
2	2 (11%)	10 (31%)	24 (22%)	36 (23%)
3	4 (22%)	12 (38%)	17 (16%)	33 (21%)
4	4 (22%)	5 (16%)	7 ( 7%)	16 (10%)
5 or more	8 (45%)	2 ( 6%)	5 ( 5%)	15 ( 9%)
	Avg 4.4	Avg 2.8	Avg 1.8	Avg 2.3

tients with a negative laparotomy. Survivors with organ injuries and shock on admission were transferred to the operating room in 30-729 minutes (average 108 minutes). Those without shock on admission were transferred to the operating room in 22-785 minutes (average 128 minutes). Only three patients were transferred to the operating room within ten minutes or less.

Delays appeared to be caused most frequently by resuscitative efforts. Central venous lines were not placed initially in all patients arriving in shock. Another occasional cause for delay was x-ray study. Lengthy delay (>4 hours) in laparotomy was seen in three patients who arrived in shock and whose vital signs stabilized after initial resuscitation. There were no apparent complications from this delay.

*Organ Injuries:* The number of organ injuries is

given in *Table II*. The mortality rate for patients with five or more organ injuries was 53 per cent. Of patients who survived, 86 per cent had three or fewer organ injuries.

Overall, small bowel, liver, colon, and stomach were the most frequent organs injured (*Table III*). The most frequent organ injured in single organ injuries was the small bowel. Colon and large vessel injuries were frequent in fatal cases. Large vessel injuries and associated duodenal and pancreatic injuries were more frequent in survivors with shock on admission compared to survivors without shock on admission.

*Complications:* Minor complications such as urinary tract infection or atelectasis not requiring vigorous therapy or bronchoscopy were not included in this study. Septic (abscess, wound infection) and

TABLE III  
SPECIFIC ORGAN INJURIES (NEGATIVE LAPAROTOMIES EXCLUDED)

Organ	Fatalities (N = 18)	Survivors with Shock on Admission (N = 32)	Survivors without Shock on Admission (N = 94)	Total (N = 44)
Small bowel	8 (44%)	13 (41%)	43 (46%)	64 (45%)
Colon	11 (61%)	7 (22%)	30 (32%)	48 (34%)
Liver	7 (39%)	16 (50%)	24 (26%)	47 (33%)
Stomach	8 (44%)	10 (31%)	21 (22%)	39 (27%)
Pancreas	8 (44%)	8 (25%)	11 (12%)	27 (19%)
Large vessel	9 (50%)	11 (34%)	6 ( 6%)	26 (18%)
Spleen	5 (28%)	3 ( 9%)	15 (16%)	23 (16%)
Diaphragm	5 (28%)	5 (16%)	11 (12%)	21 (15%)
Mesentery	4 (22%)	6 (19%)	9 (10%)	19 (13%)
Duodenum	4 (22%)	6 (19%)	6 ( 6%)	16 (11%)
Kidney	7 (39%)	1 ( 3%)	7 ( 7%)	15 (10%)
Ureter	3 (17%)	0 ( 0%)	2 ( 2%)	5 ( 4%)
Bladder	—	—	5 ( 5%)	5 ( 4%)
Gallbladder	1 ( 6%)	3 ( 9%)	0 ( 0%)	4 ( 3%)

TABLE IV  
COMPLICATION RATE IN SURVIVORS

# of Organs Injured	% Shock on Admission with Complications	% No Shock with Complications	Total
1	0	(17%)	15%
2	( 33%)	(25%)	27%
3	( 62%)	(35%)	47%
4	( 60%)	(43%)	50%
5 or more	(100%)	(60%)	67%
	47%	26%	32%

respiratory (severe atelectasis, pneumonia) complications were the most frequent.

Complications occurred twice as often in survivors with shock on admission compared to survivors with no shock. No complications were noted in patients undergoing a negative laparotomy.

The complication rate as well as the number of multiple complications increased with greater numbers of organs injured (*Table IV*). Overall complication rate for survivors was 32 per cent. Serious complications occurred in 67 per cent of patients with five or more organ injuries. Primary skin closure was performed in 99 per cent of patients, and nine (7%) developed postoperative wound infections.

## Discussion

No triage system or specific protocol for the emergency room management of the patient presenting with a GSW of the abdomen exists in many community hospitals. Guidelines have been specified by others,<sup>6-9</sup> but the initial evaluation and resuscitation is frequently performed by nonsurgeons in community hospital emergency rooms. Key and Nance<sup>8</sup> reviewed time-management of patients in their emergency room. They found a certain amount of overuse of diagnostic procedures or overtreatment in some patients (shotgun approach), and emphasized it matters not so much *whether* a procedure needs to be done, but *when* it needs to be done. This indicates the difficulty of following a set protocol with each patient.

Age and population distribution in our series is consistent with that found by others reporting larger series of GSW of the abdomen.<sup>1-4</sup> Dawidson<sup>1</sup> also reports that handgun injuries are the most frequent type of GSW. The incidence of self-inflicted GSW was reported by Taylor<sup>3</sup> to be 20 per cent compared to our overall incidence of 12 per cent. Hospital stay

TABLE V  
RESULTS OF OTHER SERIES OF GSW  
OF THE ABDOMEN

Author	# Patients	Mortality	Negative Laparotomies
Danto <sup>6</sup> 1977	72	10.1%	21%*
Dawidson <sup>1</sup> 1976	277	12.0%	14%
Nance <sup>2</sup> 1974	1032	12.5%	9.4%
Stevenson <sup>16</sup> 1975	120	13.3%	—
Taylor <sup>3</sup> 1973	246	12.7%	15%
Our Series	158	11.4%	9%

\* 7% negative laparotomy rate when peritoneal lavage used

for survivors and patients with a negative laparotomy was consistent with that reported by others.<sup>1, 2, 4</sup>

Negative laparotomy rate and mortality rate in our series was comparable to results reported by major trauma centers (*Table V*). Controversy exists regarding selective<sup>2, 10-12</sup> vs mandatory<sup>3, 13-15</sup> exploration in gunshot wounds of the abdomen. In our series, 91 per cent of all patients had visceral injury requiring repair, and no morbidity and mortality were seen in patients who had a negative laparotomy. This supports a policy of mandatory exploration in centers where a low volume of GSW is seen.

The mortality rate for patients with five or more organ injuries was 53 per cent in our series, while Nance<sup>2</sup> reported a mortality rate of 42 per cent and Dawidson<sup>1</sup> 63 per cent for this extent of injury. Similarly, hemorrhage and sepsis were the leading causes of death in other series.<sup>1, 2</sup> Overall distribution of organ injuries correlates well with series from major trauma centers.<sup>1-3, 16</sup> The mortality rate for aortic and vena cava injuries (67%) was higher than that reported by others.<sup>17, 18</sup>

The overall complication rate for survivors was 32 per cent. Dawidson<sup>1</sup> reported a complication rate of about 50 per cent in his series, while Nance<sup>2</sup> reported 36 per cent. Dawidson also reported serious complications in all patients with five or more organ injuries.

On the basis of patient population, negative laparotomy rate, mortality rate, organ injuries and complications, the results of our series compare well with those reported by major trauma centers; nevertheless, definite weaknesses were evident.

*Shock on Admission Used in Triage:* Fifteen (83%) patients who subsequently died had shock on admission. In absolute numbers, about twice as



many patients with shock on admission survived. Shock alone cannot be used as a predictor of survival, although its absence indicates a good prognosis. More useful prognostic indicators in our series included the amount of blood administered, the number of organ injuries, and the finding of a large vessel injury at laparotomy.

Overall, 32 per cent of patients with shock on admission died. This is similar to results reported by Nance,<sup>2</sup> and he emphasizes that shock alone is a mandatory indication for early exploration. There was no significant difference in the time of transfer to the operating room for survivors with or without shock on admission. This indicates that shock on admission was not effectively used to triage patients as far as rapid transfer to the operating room.

**Delay in Transfer to Operating Room:** Significant delay in transfer to the operating room was seen in many of the patients who died with hemorrhage on the operating table. Noer<sup>19</sup> has advocated immediate transfer to the operating room (as a receiving unit) of the critically injured patient. After arrival in the operating room, x-ray and further diagnostic studies may be performed or immediate laparotomy undertaken. Fischer<sup>20</sup> reports a lowered mortality rate in dealing with blunt abdominal injuries using this method. This may be a particularly useful policy in patients with GSW of the abdomen, since almost all will undergo subsequent laparotomy. Bypassing community hospital emergency rooms that are not staffed with surgeons may eliminate fatal delays in management of this type of patient.

Discontinuity of resuscitative efforts also resulted from delays in the emergency room. In our series, delays were seen for placement of CVP catheters in patients with shock. This should be performed in the operating room, since Nance<sup>2</sup> emphasizes that shock alone warrants immediate exploration. Many patients with shock have large vessel injuries which can only be controlled by laparotomy. Furthermore, since a vast majority, if not all, of these patients will subsequently undergo laparotomy, the operating room can be made to function as a receiving unit. This requires designation of one operating room as the trauma receiving unit for the critically injured patient, and it must be readily available at all times. The effectiveness of operating facilities in community hospital emergency rooms is questioned if this protocol is followed.

## Conclusions

There are several differences in the management of GSW of the abdomen in community hospitals

compared to major trauma centers. The total number of cases annually is small, as well as the number handled by an individual surgeon. However, on the basis of patient population, type of weapon, organ injuries, and morbidity and mortality, we feel the results of this series are comparable to those reported by major trauma centers. Several deficiencies were seen: (1) when using shock for triage as a mandatory indication for early exploration; (2) time of transfer to the operating room may have led to delays in lifesaving laparotomy in patients with large vessel injuries; and (3) a discontinuity of resuscitative efforts may have also occurred during transfer to the operating room. Immediate transfer of the critically injured patient to an operating room designated as a receiving unit should be considered in community hospitals.

## References

1. Dawidson, I. *et al.*: Gunshot wounds of the abdomen. *Arch. Surg.* 111:862-865, 1976.
2. Nance, F. C. *et al.*: Surgical judgment in the management of penetrating wounds of the abdomen. *Ann. Surg.* 179:639-646, 1974.
3. Taylor, F. W.: Gunshot wounds of the trunk. *Ann. Surg.* 177:174-177, 1973.
4. Jett, H. H. *et al.*: Clinical and socioeconomic aspects of 254 admissions for stab and gunshot wounds. *J. Trauma* 12:577-580, 1972.
5. Francis, A. and Bosiljevac, J. E.: Abdominal gunshot wounds. *J. Kans. Med. Soc.* 79:211-213, 1978.
6. Danto, L. A. *et al.*: Penetrating torso injuries: The role of paracentesis and lavage. *Am. Surg.* 43:164-170, 1977.
7. Freeark, R. J.: Penetrating wounds of the abdomen. *N. Engl. J. Med.* 291:185-188, 1974.
8. Key, G. F. and Nance, F. C.: A time-management study of 25 patients with penetrating wounds of the chest and abdomen. *J. Trauma* 16:524-530, 1976.
9. Shires, T.: Initial care of the injured patient. *J. Trauma* 10:940-948, 1970.
10. Richter, R. M. and Zaki, M. H.: Selective conservative management of penetrating abdominal wounds. *Ann. Surg.* 166:238-244, 1967.
11. Ryzoff, R. *et al.*: Selective conservative management of penetrating abdominal wounds. *Surgery* 59:650-653, 1966.
12. Shaftan, G. W.: Selective conservatism in penetrating abdominal trauma. *J. Trauma* 9:1026-1028, 1969.
13. Edwards, J. and Gaspard, D. J.: Visceral injury due to extraperitoneal gunshot wounds. *Arch. Surg.* 108:865-866, 1974.
14. Forde, K. A. *et al.*: Is mandatory exploration for penetrating abdominal trauma extinct? The morbidity and mortality of negative exploration in a large municipal hospital. *J. Trauma* 14:764-767, 1974.
15. Maynard, A. L. and Oropeza, G.: Mandatory operation for penetrating wounds of the abdomen. *Am. J. Surg.* 115:307-312, 1968.
16. Stevenson, H. M. and Wilson, W.: Gunshot wounds of the trunk. *Br. Med. J.* 1(5960):728-730, 1975.
17. Turpin, I. *et al.*: Injuries to the inferior vena cava and their management. *Am. J. Surg.* 134:25-32, 1977.

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# Progressive Disseminated Histoplasmosis

## *A Case Presenting as Fever of Unknown Origin*

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ACUTE PULMONARY histoplasmosis is a relatively common disease with excellent prognosis; however, the disseminated form is usually fatal when untreated.<sup>1, 2</sup> The diverse manifestation of progressive disseminated disease may pose a diagnostic dilemma to the practicing physician. The patterns of presentation may mimic a host of other maladies including other types of pulmonary infections, particularly tuberculosis, other fungal diseases, sarcoidosis, lymphoma, carcinoma, and some varieties of occupational exposures. The crucial factor in diagnosis is awareness of the broad clinical spectrum of that rare entity. Laboratory studies including serologic tests, biopsies for histopathological examination and visualization of the organism, together with careful culture studies to isolate the causative agent are the mainstay for a definitive diagnosis. Such diagnostic modalities, however, are not without limitations. In the disseminated form of the disease, a state of anergy frequently exists, and immunologic responses can be negative.<sup>3</sup> Previous studies have shown that the complement fixation tests were not diagnostic and may be misleading.<sup>4</sup> Even in some patients with this entity, the cultural attempts have not always been successful.<sup>5</sup>

In the case presented here, rapidly progressive disseminated histoplasmosis occurred in a young white male farmer from Kansas after cleaning a chicken coop. Prior treatment with corticosteroids was probably a factor in the life threatening dissemination<sup>6</sup> after inhalation of a large infecting inoculum from the chicken coop.

### Case Report

A 24-year-old farmer from Kansas was admitted because of a six-week history of fever of unknown origin. He was in vigorous health until two months earlier when he developed a skin rash following exposure to poison ivy for which he was treated with a course of steroids. Two weeks later, he developed fever and dry cough which partially responded to tetracycline. During the following three weeks, he

experienced generalized fatigue, anorexia, and recurring fever accompanied by chills, sweats, and nocturnal cough productive of white sputum. He was seen in another hospital where a chest x-ray was interpreted as unremarkable (*Figure 1*), and he received Vibramycin. During the week before entry, symptoms persisted and he developed leftsided

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**An unusual case of progressive disseminated histoplasmosis presented as fever of unknown origin in a young, previously healthy male. The overwhelming infection was accompanied by suppressed immunologic response and negative complement fixation for histoplasmosis. Prior treatment with corticosteroids possibly had contributed to dissemination. Treatment with amphotericin B resulted in recovery.**

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pleuritic chest pain and became progressively short of breath. The patient lost 3.6 kg in weight during his illness. He denied history of rheumatic fever, valvular heart disease and drug abuse, and there was no exposure to tuberculosis. However, in retrospect, he admitted that three months earlier he had cleaned out an old chicken coop that had been dormant for three or four years. A few days later, he further removed the chicken droppings and sprayed it for a second time, and that was the first occasion when anterior chest oppression and spiked temperature developed. There was no history of allergy, use of medications, or recent travel.

On examination the patient was moderately dyspneic, and appeared acutely ill. Temperature was 39.2 C; pulse, 80; and respirations, 28. Blood pressure was 118/68. No rash or lymphadenopathy was found. The head was normal and neck supple; there was no evidence of cardiomegaly. A soft systolic murmur Grade 2/6 was heard over the left sternal border. The lungs showed fair intensity of breath sounds and a few scattered rales in both lung fields, but no evidence of pleural friction rubs. The liver and spleen were not palpable. There was no

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From the Colmery-O'Neil Veterans Administration Medical Center, Topeka, Kansas.





Figure 1. Preadmission chest x-ray, PA view. Bilateral nodular densities more in mid-lung fields.



Figure 2. Admission chest x-ray, AP view. Extensive bilateral nodular densities with prominence of right hilum and paratracheal node.

peripheral edema, clubbing or cyanosis, and there was no swelling, tenderness, or erythema of the joints. Chest x-ray showed bilateral disseminated nodular infiltration in both lung fields (*Figure 2*).

The patient was submitted to extensive studies to pinpoint the underlying cause, including possibilities of tuberculosis, fungal disease, possible sarcoidosis or lymphoma, and a full host of etiologies including viral and to rule out possible subacute bacterial endocarditis.

Urine was normal. Hematocrit was 40%; white cell count, 5400 with 72% neutrophils, 22% lymphocytes, 2% eosinophils, and 4% macrocytes. Platelet count was 365,000; sedimentation rate, 45 mm/hr.

Blood chemistry and electrolytes were normal. There was a mild elevation of serum enzymes, SGOT, alkaline phosphatase, and SGPT, but CPK was normal. Serum protein electrophoresis and immunoelectrophoresis were normal. Blood cultures were repeatedly negative, urine cultures yielded no growth, and sputum grew *Alpha streptococci*. Repeated sputum studies on six occasions were negative for AFB and fungi on smears and later by cul-

tures. Viral studies and serology (coxsackie, ECHO, CMV) were negative. Complement fixation for fungi, histoplasmosis (yeast antigen and histoplasmin), blastomycosis, and coccidioidomycosis were negative on admission and at followup. Febrile agglutinins (salmonella, typhoid, paratyphoid, brucella abortus, and proteus OK-19) were repeatedly negative. Histoplasmin skin test was positive (2 mm x 14 mm), as was mumps skin test. Tests for antinuclear antibodies, LE cells, RA factor, heterophil antibodies, and cold agglutinins were all negative. The ASO titers were normal, and serology for syphilis was negative. Cardiac fluoroscopy as well as echocardiogram and EKG were normal. In addition to disseminated nodular lesions, chest tomograms showed some enlargement of right hilar nodes and possible slight enlargement of the right paratracheal node. Liver and spleen scans showed a slightly enlarged spleen.

On the second hospital day, a bone marrow smear and button showed that it was cellular with a normal myeloid-erythroid ratio, iron stores were adequate, and megakaryocytes were plentiful. No evidence of



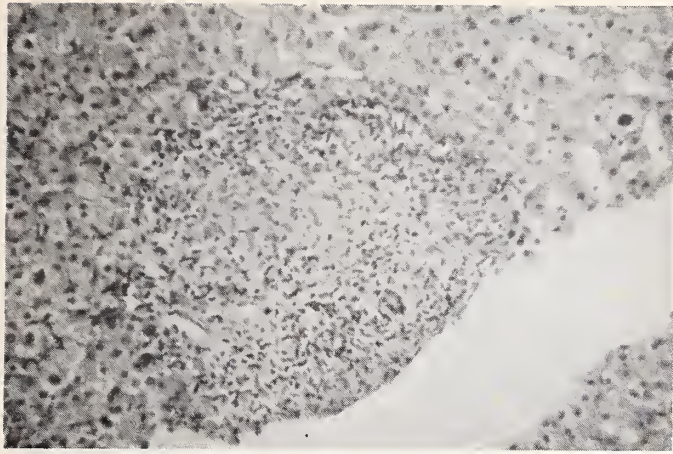


Figure 3. Liver biopsy showing the presence of well formed granuloma, the central portion made up of foreign body and Langhans' giant cells surrounded by a rim of epithelioid cells and peripheral lymphocytes. Magnification  $\times 250$ .

granuloma, lymphoma or carcinoma was seen, and cultures for AFB and fungi were performed.

On the third hospital day, a liver biopsy (*Figure 3*) was performed and showed fairly numerous granulomatous reactions with focal caseation necrosis. Granulomas were well formed, the central portion made up of foreign body and Langhans' giant cells surrounded by a rim of epithelioid cells and a peripheral rim of lymphocytes. Special stains for fungus (Gomori methionine silver stain, PAS as well as acid fast including fluorescent stains) were all negative, and cultures were performed.

On the fourth hospital day, the patient underwent fiberoptic bronchoscopy which showed normal tracheobronchial tree; bronchial washings and brushings were submitted for bacteriological, AFB,



Figure 4. Lymph node biopsy showing tuberculoid granuloma with central caseation and Langhans' type of giant cells. Magnification  $\times 250$ .



Figure 5. Lung biopsy, gross specimen showing evidence of multiple granulomata.

fungal, cytologic and pneumocystitis carinii which were all negative by smears and later by cultures. A right supraclavicular lymph node biopsy (*Figure 4*) showed tuberculoid granuloma with central caseation and Langhans' type giant cells. The fungi stains were negative, and tissue was cultured.

In view of the lack of a specific cause and as a therapeutic trial, the patient was started on isoniazid, ethambutol and rifampin. For the two weeks following antituberculosis treatment, the patient's course was that of rapid deterioration, with hectic temperature ranging from 37.5-40.5 C daily accompanied by chills, night sweats, anorexia, loss of weight, progressive shortness of breath, and generalized weakness. Studies for evidence of adrenal insufficiency were normal, including plasma cortisol levels and urinary 17 hydroxysteroids and 17 ketosteroids, as well as ACTH stimulation test.

On the 20th hospital day, an open lung biopsy was performed showing extensive caseating granulomas (*Figure 5*). Gomori methionine silver stain revealed the presence of numerous organisms consistent with *Histoplasma capsulatum* throughout all granulomas seen in the lung parenchyma (*Figure 6*). This was later confirmed by positive culture for histoplasmosis.



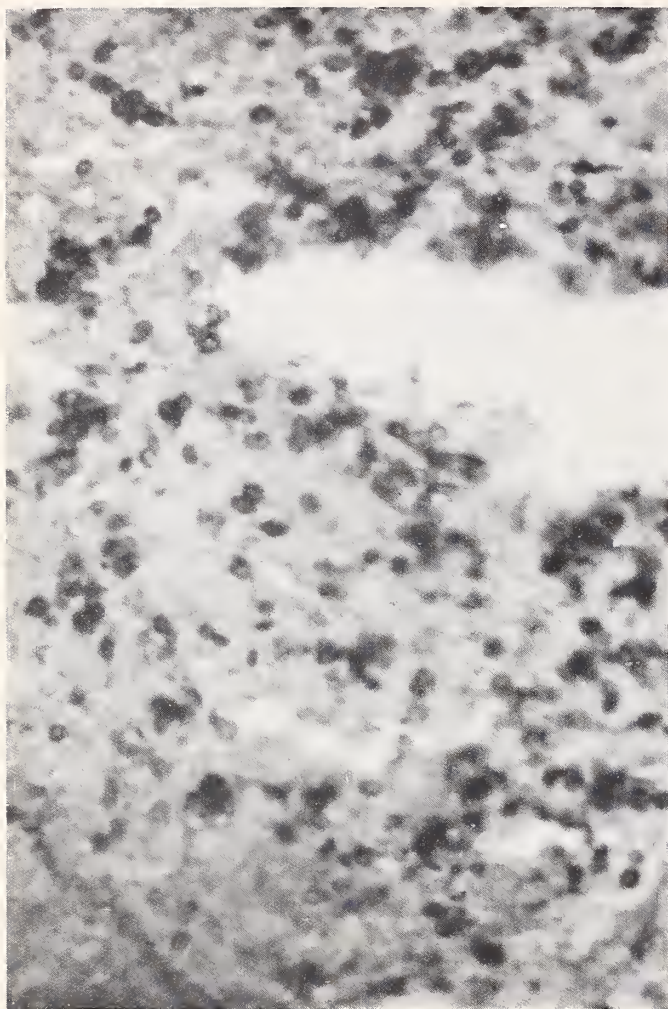


Figure 6. Lung biopsy microscopic. Specimen loaded with small oval black stained organisms consistent with *H. capsulatum*. Gomori's methionine silver stain. Magnification  $\times 400$ .

The patient was started on amphotericin B, and received a total of 1450 mgm during a 16-week period with close monitoring of renal, hepatic, and hematologic processes. The patient showed gradual improvement and tolerated amphotericin B without appreciable side effects except for temporary mild renal impairment. Following completion of treatment and two weeks of convalescence, he was discharged (*Figure 7*). During a two-year followup period, he remained well with no evidence of relapse, and repeated examinations for adrenal hypofunction were negative. The patient is working at full capacity and is still seen in followup at six-month intervals.

### Discussion

The clinical spectrum of infection with *Histoplasma capsulatum* may range from asymptomatic to

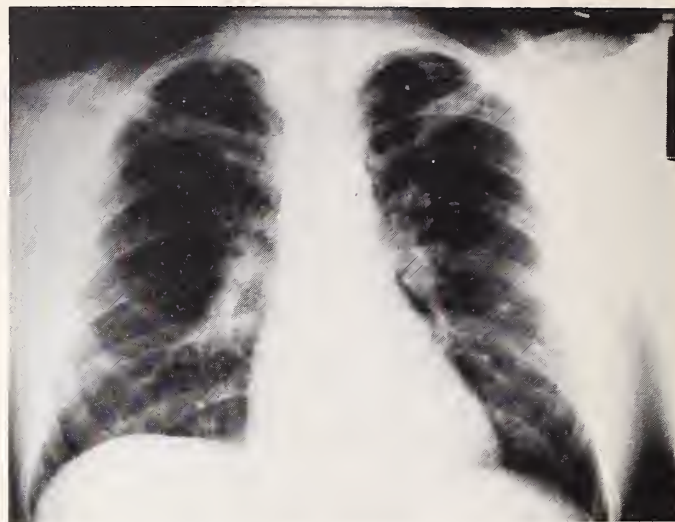


Figure 7. Chest x-ray at discharge after treatment with amphotericin B showing marked resolution.

generalized fatal dissemination.<sup>7</sup> More than 80 per cent of persons infected will pursue a benign course, recognized by pulmonary calcification and hypersensitivity to histoplasmin skin tests.<sup>8, 9</sup> Transient fungemia probably occurs in all cases with primary histoplasmosis. This is usually asymptomatic, self-limited, and may show as positive blood or urine culture and later by splenic calcification.<sup>10</sup>

On the other hand, progressive disseminated histoplasmosis develops in a rare minority of infected individuals. The true incidence is not known and has varied in different series from 1:1000 to 1:50,000,<sup>10, 11</sup> more frequently in the young, the elderly ( $>60$  years), and in patients who are immunosuppressed.

Since histoplasmosis is primarily considered a disease of the reticuloendothelial system, it is not surprising that the disease will have protean clinical manifestations when it becomes progressively disseminated. It may present as a systemic illness with multiple organ system involvement. The patient may have hepatosplenomegaly, generalized lymphadenopathy, fever, night sweats, anorexia, weight loss, anemia, and leukopenia.<sup>12</sup> Conversely, there may be fewer systemic manifestations, or the disease may affect predominantly one organ, resulting in adrenal insufficiency, solitary ulcerations, or involvements of oropharynx, larynx,<sup>13</sup> stomach or bowel,<sup>14</sup> or infection of abnormal cardiovascular surfaces (endocarditis and end-arteritis).<sup>15</sup> Adrenal involvement is quite common, and often is the cause of serious adrenal hypofunction.<sup>11, 12</sup> Sorai and co-workers<sup>16</sup> have reported that 50 per cent of patients



with disseminated histoplasmosis have adrenal insufficiency at the time of presentation, and other patients become Addisonian years after apparently successful chemotherapy.

Patients who are immunosuppressed, due either to therapy or reticuloendothelial malignancy or leukemia, are at a particular risk for development of disseminated disease.<sup>17</sup> Smith and Utz, in their prospective study of 26 patients, have stressed that many of their patients presented with a febrile illness and non-specific localizing complaints, and that progressive disseminated histoplasmosis must be considered in the differential diagnosis of fever of unknown origin.<sup>12</sup> Symptoms that suggest such a possibility include hepatic involvement, hematologic disorder, orolaryngeal ulceration, or renal function abnormalities.

In disseminated disease, bone marrow, lymph nodes, blood, and samples of involved organs (liver, lung, mucosal lesions) should be examined microscopically and in cultures. The bone marrow is especially useful and should be obtained from any patient presenting with febrile illness of unknown origin. Some reports stressed that a rapid diagnosis can be made by direct examination for fungi and granuloma; however, failure to demonstrate these do not rule out the diagnosis.

The characteristic histologic pattern is that of an epithelioid cell granuloma, a lesion that frequently contains Langhans' type giant cells. As lesions age, the central portion will develop caseating necrosis and may calcify. *H. capsulatum* is usually found in the caseous material. It is seen poorly and sometimes not seen at all with hematoxylin eosin staining but is seen well with Gomori methionine silver stain.<sup>18</sup> Specific therapy can sometimes be initiated while culture reports are pending. Difficulties in cultures of *H. capsulatum* are multifactorial. It depends upon the laboratory ability and the supply of adequate fresh specimens from the patient. It was recommended that specimens be plated in at least two media (Sabouraud's agar and blood agar), with and without antibiotic, and incubated at room temperature. Use of Sabouraud's agar alone would have missed 52 per cent of isolations according to a study from the University of Kentucky.<sup>19</sup> Cultures are held for at least six weeks before they are reported as negative.

The immunologic studies are also of limited help. The positive serology is a presumptive evidence of infection.<sup>20</sup> With the complement fixation test (histoplasmin and yeast), the yeast phase titer shows some correlation with the presence of disseminated disease; however, cross reaction with other mycosis makes it nonspecific, and false negative results may render interpretation difficult.<sup>21</sup> Previous histoplasmosin skin tests may lead to an increase in the complement fixation titer and should be discouraged.<sup>22</sup> Immuno-diffusion and counter-immunoelectrophoresis have been employed more recently for detection of *m* and *h* precipitin bands.<sup>23</sup> Precipitating antibodies to the *h* antigen were predominantly found in patients with systemic disseminated disease, and appear to be a promising diagnostic tool — particularly when demonstrated by counter immunoelectrophoresis.

*Disseminated disease always requires treatment.*

The mortality rate without chemotherapy is greater than 90 per cent. Therapy with amphotericin B in a total dose of 25-30 mg/kgm has reduced mortality in disseminated disease to less than 20 per cent.<sup>24</sup>

## Summary

A case of progressive disseminated histoplasmosis presented as fever of unknown origin. The clinical, laboratory, and histopathological features have been discussed and a short review presented of different diagnostic modalities. Recognition and prompt treatment with amphotericin resulted in recovery and cure in this case.

References are available from the author.

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## Abdominal Gunshot Wounds

(Continued from page 558)

18. Mandal, A. K. *et al.*: Ninety-eight penetrating vascular injuries: A review of a two and one half year experience. *J. Trauma* 16:354-360, 1976.

19. Noer, R. J.: Emergency care of critically injured. *J. Trauma* 3:331, 1963.

20. Fischer, R. P. *et al.*: Direct transfer to operating room improves care of trauma patients. *JAMA* 240:1731-1732, 1978.



# B.A.E.R.

## *Brainstem Auditory Evoked Potentials in Brainstem Compression and Displacement from Posterior Fossa Tumor*

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BRAINSTEM auditory evoked responses (BAER) are now widely used in detecting subclinical lesions of the brainstem in demyelinating diseases and degenerative disorders, in evaluating hearing in infants, in establishing the diagnosis of cerebral death, in evaluating transtentorial herniation with secondary brainstem dysfunction, in differentiating coma caused by intrinsic brainstem lesions from toxic metabolic disturbances, in evaluation of progressive external ophthalmoplegia, as well as in acoustic neuromas.<sup>1-8</sup>

The application of BAER in brainstem displacement from extrinsic posterior fossa lesions and compression of contralateral neural pathways has not been reported before. We describe here a case of posterior fossa meningioma which not only compressed the ipsilateral eighth nerve and auditory pathways, but caused displacement of the brainstem, resulting in compression of contralateral brainstem structures as well as auditory pathways. All of these changes were detected in the BAER before any clinical signs could be demonstrated in the patient. The abnormal latencies in various BAER components correlated well with changes seen on the computerized axial tomography (CAT) scan.

### Case Report

A 50-year-old white male was referred to Neurology Service because of a history of intermittent right facial pain and hearing loss in the right ear of several months duration. The patient's past history included surgery for gallstones and an above-knee amputation on the right side following trauma to the right lower extremity several years earlier. Results of the general physical examination were otherwise unremarkable. Neurologic examination revealed normal mental status and fundus oculi. Pupils were equal and reactive. He had loss of corneal reflex on the right

side and impairment to pinprick in the distribution of the ophthalmic branch of the right trigeminal nerve. A hearing impairment in speech discrimination on the right side was noted. There was no facial asym-

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**A case of cerebello-pontine angle tumor is presented. Brainstem auditory evoked response (BAER) findings were not only diagnostic of eighth nerve lesion, but also suggestive of brainstem compression and contralateral displacement. These findings were confirmed by CAT scan as well as at surgery.**

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metry, tongue was midline, and no motor weakness was noted. Reflexes, cerebellar functions, and sensory examination results were normal. The patient walked with a limp because of the prosthesis worn subsequent to amputation. Routine blood count was normal. Levels of serum SGOT, LDH, calcium, bilirubin, alkaline phosphatase, and serum electrolytes were all normal. A radionuclide brain scan was unremarkable as was an electroencephalogram.

Brainstem auditory evoked response measurement (BAER) was determined with 0.1 msec clicks presented monaurally through a head phone at a rate of 20/sec; click intensity was 65 db above hearing threshold but was increased when necessary to aid in identification of response components. Neural activity was recorded from a pair of electroencephalographic disc electrodes at the vertex (CZ) and ear lobule ipsilateral to the site of stimulation, and was differentially amplified and filtered through 100-3000 hertz. The average of 2000 such responses was repeated at least three times on an XY plotter. The latencies of various components based on 100 normal males — average age, 50 years — are as follows: wave I (1.9 msec  $\pm$  .2 msec) interpeak I-III latency 2.6 ( $\pm$  .2) and III-V interpeak latency 2.5 ( $\pm$  .2 msec).

The BAER recorded from the patient (*Figure 1*) has a latency of wave I from right ear 3.9 msec, I-III interpeak latency was 3.7 msec, and III-V interpeak

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Figure 1. BAER in the patient. Calibration time 1 msec/div and amplitude 5 mv/5mm.

latency was 4.2 msc. From the left ear, the wave I latency was 2.2 msc. I-III interpeak latency was 3.2 msc, and III-V interpeak latency was 4 msc. A computerized axial tomography scan (CAT) of the head revealed a mass extra axial at the right cerebello-pontine angle. This was associated with compression and shift of the fourth ventricle to the left side of the midline (Figure 2). Cerebral angiogram showed the mass to be avascular. At operation, the mass was found to involve the eighth nerve, and was compressing the fifth nerve as well. There was also displacement of the brainstem to the left. Pathologically it was a meningioma. Postoperatively there was improvement in the patient's shocklike pain in the face.

## Results

The prolonged latency of wave I on the right side was consistent with a lesion of the eighth nerve whereas prolonged interpeak latency of I-III and

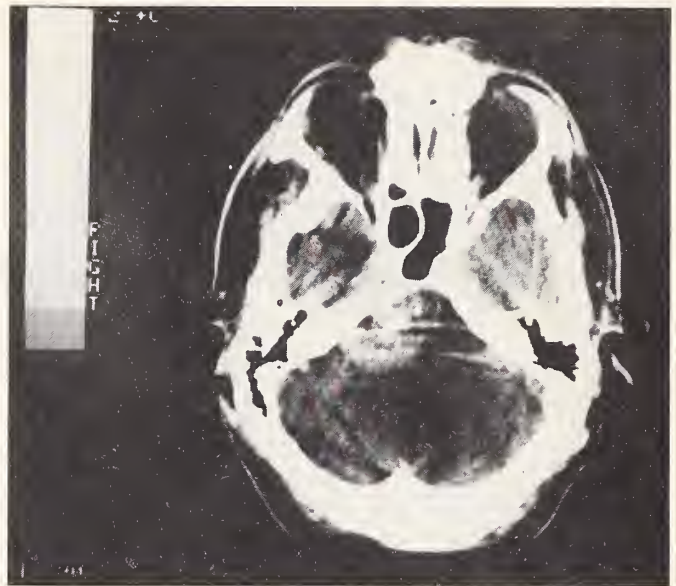


Figure 2. CAT scan showing tumor mass with shift of fourth ventricle.

III-V waves suggested brainstem dysfunction on the right side. On the left side wave I latency was normal but interpeak latencies of I-III and III-V were prolonged, but to a lesser extent than on the right side. This suggested a lesion on the right eighth nerve with compression of the auditory neural pathways on that side and displacement of brainstem and contralateral compression of the opposite neural pathways, sparing however, the left eighth nerve. These findings correlated well with the CAT finding of a mass on the right side with compression of the fourth ventricle and brainstem on the right side as well as displacement to the left side of the ventricular system, resulting in contralateral compression of the neural structures.

## Discussion

A number of previous studies have demonstrated usefulness of BAER in evaluation of posterior fossa tumors, especially acoustic neuromas. Invariably they are associated with prolongation of wave I latency or an inability to record wave I. However, no such comment has been directed toward changes associated with interpeak latencies. In the present case, the patient's primary complaint was shocklike facial pain; hearing deficit was not prominent. Neurological examination revealed absent right corneal reflex and sensory deficit in the ophthalmic division of the right fifth nerve. No ataxia could be demonstrated, partly because of the above knee amputation of the right lower extremity. Neurological findings were consistent with a lesion in the

(Continued on page 570)





## Current COMMENT

H. B. LINDSLEY, M.D., *Editor*

### *Anorexia Nervosa*

ANNE P. MARSH, M.D.\* and SHIRLEY B. LANSKY, M.D.,†  
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*You can never be too thin or too rich – ‘Babe’*  
*Cushman Paley*

ANOREXIA NERVOSA is a disorder primarily of young women, characterized by profound emaciation resulting from peculiar eating habits or obsessive refusal to eat. The driving motive is the relentless pursuit of thinness, which continues despite hunger, threats or reassurances, and gaunt appearance.

#### Clinical Picture

The typical anorexic is female, adolescent to early 20s, intelligent, well-educated, and from an upper-middle class home, who develops an intense fear of “fatness” and a preoccupation with body size. Although only 15 per cent are premorbidly obese, they drastically reduce food intake in an attempt to be thin enough — a goal that is never reached. “Anorexia nervosa” is a misnomer, since patients with this syndrome have excellent appetites (although they may deny it) until quite late in the illness. Despite hunger, they consume bizarre low-calorie diets, often eliminating carbohydrates, fats, and sugars (but not protein or vitamins) entirely. Ten to forty per cent of patients periodically go on massive food binges (bulimia) then, remorse-stricken, induce vomiting. Many patients also abuse laxatives and diuretics. Most are obsessively preoccupied with food, often preparing elaborate meals for others (without eating any themselves), collecting recipes

and hoarding food. Despite their advanced state of emaciation, patients persistently think of themselves as “too fat” and adamantly resist all attempts to

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**Anorexia nervosa is characterized by a distorted body image and an obsessive fear of obesity. The typical patient is a young, intelligent female. It is unclear whether the associated hypothalamic dysfunction is cause or effect.**

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make them gain weight. There is often a striking hyperactivity in sharp contrast to their extreme emaciation, and ritualized exercising, often in an attempt to facilitate weight loss.

The anorexic’s physical appearance is characteristic. By definition, she has lost at least 25 per cent of her body weight. Cachexia is usually striking, with relative preservation of breast tissue. Patients are usually bradycardic, hypotensive and hypothermic, with cold extremities and dry skin. There may be increased fine, lanugo body hair, as well as mild peripheral edema and parotid enlargement. Amenorrhea occurs in close to 100 per cent of women anorexics, and in 25-50 per cent begins before onset of weight loss.

Anorexia is increasing in frequency; an incidence as high as one in 200 in high-risk groups has been reported. Ten per cent of patients are male. Age at onset is usually mid-teens although it may begin as late as the early 30s. It is rare in blacks and in cultures other than European or North American.

Generally accepted diagnostic criteria for anorexia nervosa (*Table I*) were published by Feighner in 1972.

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TABLE I

## DIAGNOSTIC CRITERIA FOR ANOREXIA NERVOSA

Age of onset before 25 years.
Anorexia with weight loss $\geq$ 25 per cent of original body weight.
Distorted, implacable attitude toward eating, food, or weight that overrides hunger, admonitions, reassurances, and threats, <i>e.g.</i> :
Denial of illness with failure to recognize nutritional need
Enjoyment in losing weight
Desired body image of extreme thinness
Unusual hoarding or handling of food
No known medical illness or account for weight loss.
No other psychiatric disorder.
At least two of the following:
Amenorrhea
Lanugo
Bradycardia
Overactivity
Bulimia
Vomiting (may be self-induced)
(From Feighner, J. P.; <sup>3</sup> used with permission)

## Psychopathology

Theories on the psychopathology of anorexia nervosa differ widely. No distinct personality profile or stress factor is consistently identified; however, in primary anorexia nervosa there is no other identifiable psychiatric disorder. Unlike depression, hysteria or schizophrenia, in which abnormalities in eating behavior may occur but are the result of another illness, the obsession with thinness is the primary psychopathology.

Anorexics often show considerable psychosexual immaturity, deny all interest in men, and are fearful when men are attracted to them. Severe weight loss with its resultant child-like appearance is felt by some to symbolize rejection of their role as a sexual being.

There is a perceptual disturbance of body image most evidenced clinically by an implacable insistence that she is too fat when, in fact, she is gruesomely thin. A study by Slade and Russell in 1971<sup>1</sup> found that these patients markedly overestimated their own width but not height. Perceptual abnormalities diminished as the patients recovered.

Anorexics are known to have difficulty correctly interpreting body sensations, particularly hunger and fatigue. They are able to identify gastric contractions, but they do not equate these sensations with nutritional need. Similarly, the hyperactivity often

seen in anorexics may be due to denial or misunderstanding of fatigue.

In up to 50 per cent of cases, no obvious precipitating event can be found. Anorexics often express a fear of not being respected, a feeling of helplessness and ineffectiveness, and a fear of not being in control of their lives. For some, dieting may represent control, at least of their own bodies, and provide a sense of accomplishment.

## General Medical Aspects

In anorexia nervosa, the primary nutritional deficiency is one of carbohydrates and calories rather than protein or vitamins, in contrast to most other forms of malnutrition. Consequently, there are usually no hematologic manifestations of megaloblastosis or iron deficiency. Anemia is mild ( $\leq$  10 gm/100 ml) and normocytic normochromic. Leukopenia is common (50-60%) and usually mild, although counts  $<500$  have been reported. Prominent acanthosis, possibly related to low levels of beta-lipoproteins, may be present on the peripheral smear, unlike other forms of protein-calorie malnutrition.

The erythrocyte sedimentation rate (ESR) in anorexia nervosa is usually low (range 0-4 mm/hr), providing an important diagnostic clue in unexplained weight loss. Paradoxically, it returns to normal with refeeding.

Echocardiography has shown a significant decrease in cardiac dimensions. With rapid refeeding, cardiac decompensation may develop since increased metabolic demands may overload the contracted left ventricle.

ECG changes include inverted or flattened T waves, QT prolongation, ST segment changes, and ventricular ectopy. These changes are unrelated to electrolyte abnormalities.

Gastrointestinal function is thought to be relatively normal, although delayed gastric emptying has been reported. Acute gastric dilatation is a rare complication of refeeding. Amylase may be elevated, possibly related to effects of malnutrition on the pancreas or salivary glands. Liver function tests are usually normal.

Most electrolyte abnormalities in anorexia nervosa can be explained by the unusual behavior of the patients, *e.g.*, self-induced vomiting, laxative and diuretic abuse, and unusual dietary practices. The most common abnormalities are hypokalemia (67%), hyponatremia, and a metabolic alkalosis related to vomiting and volume contraction. These findings are in contrast to simple starvation where electrolyte depletion is rarely noted.



Hypoalbuminemia is less prominent in anorexia nervosa than in most other starvation states, perhaps because patients tend to eat adequate amounts of protein. Serum cholesterol may be elevated. Measurement of serum carotenoids is a useful diagnostic point; Robboy's 1974 study<sup>2</sup> found marked elevation of total serum carotene in anorexia nervosa. In patients with simple weight loss or cachexia, serum carotene was decreased.

Anorexics may fail to maximally concentrate their urine in response to dehydration, a defect that corrects with the administration of vasopressin. The severity of this partial diabetes insipidus correlates with the severity of intolerance to thermal stress — an index of hypothalamic dysfunction. Anorexics exposed to acute hyper- or hypothermia fail to maintain normal core temperature and never develop shivering when cold. These changes are proportional to the degree of weight loss, but may not reverse with weight gain.

### Endocrine Aspects

Gonadal failure is the rule in anorexia nervosa with amenorrhea in nearly 100 per cent of women and loss of libido and infertility in males. Low serum follicle stimulating hormone (FSH), luteinizing hormone (LH), and total estrogen has been well documented. The administration of clomiphene does not increase the secretion of gonadotrophins, or the response is blunted; there is no withdrawal bleeding after a progestogen.

Peak LH and FSH levels in response to gonadotrophin releasing hormone (GnRH) are quantitatively somewhat low. This effect is proportional to the amount of weight lost. The response normalizes and ovulation is induced with repeated injections of GnRH, suggesting a "disuse" phenomenon resulting from low levels of endogenous GnRH. Similar results are found in protein-calorie malnutrition. The combination of low serum LH, FSH, and estrogen with a response to GnRH consistent with a disuse phenomenon suggests hypothalamic, rather than pituitary dysfunction.

Clinically, patients with anorexia nervosa have subtle characteristics of both hyper- and hypothyroidism. Chemically, total thyroxine (T4) is consistently in the low normal range, free T4 is normal or slightly elevated, mean basal thyroid stimulating hormone (TSH) is normal, and triiodothyronine (T3) is significantly depressed (mean value 26% that of normal). This constellation of findings has been termed the "low T3 syndrome," and is also found in a number of other catabolic states. The pathogenesis

of the isolated deficiency in T3 is the diminished hepatic deiodination of T4 to T3 (normally the source of 85% of circulating T3). Instead, a separate hepatic enzyme converts T4 to reverse T3 (rT3), an inactive isomer of T3; elevated levels of rT3 have been repeatedly demonstrated in anorexia nervosa. This enzymatic defect has been shown to be reversible with refeeding.

The 24-hour mean plasma cortisol concentration in patients with anorexia nervosa is roughly twice that of normal controls; however, the circadian rhythm (diurnal variation) is preserved, although at a somewhat higher overall level. The cortisol production rate is normal; instead, the elevation in cortisol levels is due to a decreased metabolic clearance rate of cortisol (one-third that of normal). These patients have significantly depressed serum T3, and all abnormalities of cortisol metabolism (including the prolonged clearance time) resolve with the administration of T3. Adenocorticotrophin hormone (ACTH) secretion has been found to be relatively normal.

Values of fasting growth hormone (GH) show wide scatter; however, probably 30-50 per cent of basal values are mildly to moderately elevated. Similar results have been noted in kwashiorkor. The elevated levels correlate well with the severity of weight loss.

Numerous investigators have reported mild fasting hypoglycemia in up to 45 per cent of patients. This finding, along with the exaggerated and prolonged fall in blood glucose during insulin tolerance tests, suggest an enhanced insulin sensitivity.

### Current Etiologic Theories

Hypothalamic dysfunction occurring in anorexia nervosa is well established. The endocrinopathies are due in part to a deficiency in hypothalamic releasing factors rather than pituitary or end-organ unresponsiveness. In addition, the partial diabetes insipidus and the deficiencies in temperature regulation constitute direct evidence of hypothalamic dysfunction.

The sequence of events in the pathogenesis of hypothalamic dysfunction remains to be clarified. Is there a primary hypothalamic defect that causes decreased appetite, resulting in anorexia nervosa? Does starvation or psychic stress somehow alter hypothalamic function? Most of the evidence points to the latter; *i.e.*, the reversibility of most of the abnormalities with weight gain, the finding of similar abnormalities in patients with cachexia unrelated to anorexia nervosa, and the close correlation of

severity of weight loss with severity of hypothalamic dysfunction. This hypothesis does not explain why 25 per cent of women with anorexia nervosa develop amenorrhea *before* they develop weight loss or why abnormalities in temperature regulation and water conservation do not always return to normal with weight gain.

Recently, several investigators have postulated an abnormality of central nervous system dopamine metabolism. Although direct evidence for this is minimal, decreased GH responses to L-Dopa and apomorphine, and the experimental evidence that destruction of the nigrostriatal dopaminergic tracts in rats results in a syndrome mimicking anorexia nervosa are suggestive. Some patients with anorexia nervosa benefit from the administration of L-Dopa.

### Diagnosis

Anorexia nervosa should be suspected in any patient with unexplained weight loss and a compatible history and physical examination, particularly a woman under 25 years of age. Diagnosis requires eliciting information relating to psychologic features (*Table II*) and the exclusion of other psychiatric illness, such as depression, schizophrenia, or hysteria. The differential diagnosis is that of weight loss. Malignancy — particularly lymphoma, leukemia, and solid tumors of the gastrointestinal tract — must be excluded. Other possibilities include chronic infection such as tuberculosis, fungal disease, and subacute bacterial endocarditis. Included in the differential is gastrointestinal disease, particularly inflammatory bowel disease, steatorrhea, peptic ulcer disease, and intestinal parasites. Endocrinopathies including diabetes mellitus and hyperthyroidism must be excluded. Particularly important to rule out are organic lesions of the hypothalamus and pituitary. The latter can be distinguished from anorexia

nervosa by measuring baseline plasma cortisol, T3, free T4, and baseline GH; low levels would be expected in organic hypopituitarism, unlike the normal or elevated levels in anorexia nervosa.

A careful history and physical examination may point out which of these diagnostic possibilities should be explored more fully. A suggested screening laboratory evaluation is listed in *Table III*.

### Therapy

Therapy remains controversial, since no single regimen is consistently successful. Initial therapy should be focused primarily on weight gain. If the patient is severely cachectic (<75% ideal body weight), this is best accomplished on the inpatient psychiatry ward. A 3,000-5,000 calorie diet may be offered, or a regular diet supplemented with high-calorie liquid feedings. Psychologic support, particularly by the nursing staff, is essential. Pharmacologic therapy using antidepressant medications is currently under investigation.

Once the initial weight gain has been achieved, most anorexics require further psychotherapy. Major goals include developing a sense of autonomy and increasing effectiveness in managing life stresses.

### Outcome and Prognosis

Most patients gain weight by any of a number of short term approaches and are labeled a therapeutic "success." Followup studies five years later reveal about three-fourths have normal or nearly-normal body weight; however, psychiatric disturbances usually persist. Sixty-three to one hundred per cent of patients have have persistently abnormal attitudes toward body shape, weight, and eating. Half may have definite or probable affective disorders, while 24-45 per cent show poor social adjustment.

TABLE II  
SCREENING PSYCHIATRIC QUESTIONS

1. What is your ideal body weight?  
How much do you weigh now?  
Are you too fat, too thin, or just right?  
Are you satisfied with your present body weight?
2. What did you eat for supper last night?  
for breakfast today? (Be specific)
3. Draw a picture of your body outline.
4. Do you need to use laxatives or water pills?  
How frequently?
5. How much exercise do you get?
6. In general, is your energy level high or low?

TABLE III  
SCREENING LABORATORY EVALUATION

CBC with differential
ESR
Electrolytes
SGOT, SGPT, Alk phos
Amylase
Carotene, albumin
Cortisol (fasting and 4 PM)
T3, free T4
LH, FSH
Baseline GH
Stool for occult blood, fat, and fibers
Chest x-ray



Mortality in anorexia nervosa varies widely between studies (0-20%) but seems to average 5-6 per cent. Surprisingly, the most common cause of death has been intercurrent infections or cardiac complications. Starvation per se is a relatively uncommon cause of death, perhaps because the patients are young and otherwise healthy. Suicide is uncommon, occurring more frequently in atypical forms of anorexia nervosa.

Anorexia nervosa is a disease that is being recognized with increasing frequency. The primary care physician should consider this diagnosis in all cases of unexplained weight loss, particularly in young women.

### Self-Assessment Questions

Instructions: Choose one of the following as the answer to each question.

- A = a, b, c correct
- B = a, c correct
- C = b, d correct
- D = d correct
- E = a, b, c, d correct

1. Anorexics
  - a. are always markedly cachectic
  - b. frequently massively overeat
  - c. tend to avoid eating protein
  - d. seem to have boundless energy
2. Physical findings likely to be found in anorexics include
  - a. increased body hair
  - b. bradycardia
  - c. peripheral edema
  - d. lymphadenopathy
3. Characteristic medical abnormalities include
  - a. leukopenia
  - b. hypokalemia
  - c. hyperamylasemia
  - d. iron deficiency anemia
4. Endocrinopathies in anorexia nervosa are
  - a. primarily due to pituitary failure
  - b. primarily due to lack of hypothalamic releasing factors
  - c. readily diagnosed by physical examination
  - d. generally reversible with weight gain
5. Of the following tests, the most useful in differentiating anorexia nervosa from weight loss due to malignancy is/are
  - a. ESR
  - b. CBC
  - c. serum carotene
  - d. LH

(Answers on page 578)

### References

1. Slade, P. D. and Russell, G. F. M.: Experimental investigations of bodily perception in anorexia nervosa and obesity. *Psychother. Psychosom.* 22:359-363, 1973.
2. Robboy, M. S.; Sato, A. S. and Schwabe, A. D.: The hypercarotenemia in anorexia nervosa: A comparison of vitamin A and carotene levels in various forms of menstrual dysfunction and cachexia. *Am. J. Clin. Nutr.* 27:362-367, 1974.
3. Feighner, J. P. et al.: Diagnostic criteria for use in psychiatric research. *Arch. Gen. Psychiatry* 26:57, 1972.

### Suggested Readings

1. Halmi, K. A.: Anorexia nervosa: Recent investigations. *Annu. Rev. Med.* 29:137-148, 1978.
2. Ross, J. L.: Anorexia nervosa, an overview. *Bull. Menninger Clin.* 41:418-436, 1977.
3. Drossman, D. A.; Ontjes, D. A. and Heizer, W. D.: Anorexia nervosa. *Gastroenterology* 77:1115-1131, 1979.
4. Rampling, D.: Anorexia nervosa: Reflections on theory and practice. *Psychiatry* 41:296-301, 1978.
5. Boyar, R. M.: Endocrine changes in anorexia nervosa. *Med. Clin. North Am.* 62:297-303, 1978.
6. Vande Wiele, R. K.: Anorexia nervosa and the hypothalamus. *Neuroendocrinology* (Krieger, D. T. and Hughes, J. C., eds.). Sunderland, Massachusetts, Sinauer Association, Inc., pp. 205-211, 1980.
7. Hurd, H. P.; Palumbo, P. J. and Gharib, H.: Hypothalamic-endocrine dysfunction in anorexia nervosa. *Mayo Clin. Proc.* 52:711-716, 1977.
8. Bruch, H.: *Eating Disorders: Obesity, Anorexia Nervosa and the Person Within*. New York, Basic Books, Inc., 1973.

### B.A.E.R.

(Continued from page 565)

cerebello-pontine angle, but no other findings were noted on clinical examination to suggest brainstem displacement. BAER findings suggested a lesion of the right eighth nerve with brainstem displacement, and these were confirmed by CAT scan as well as by surgery.

### References

1. Jewett, D. L.; Romano, M. and Williston, J. S.: Human auditory evoked potentials: Possible brainstem component detected on the scalp. *Science* 167:1517-1518, 1970.
2. Hecox, K. and Galambos, R.: Brainstem auditory evoked responses in human infants and adults. *Arch. Otolaryngol.* 99:30-33, 1974.
3. Ahmed, I.: Brainstem auditory evoked potentials in tentorial herniation. *Clin. Electroencephal.* 11(1):34-37, 1980.
4. Robinson, K. and Rudge, P.: Abnormalities of auditory evoked potentials in patients with multiple sclerosis. *Brain* 100:19-40, 1977.
5. Starr, A.: Clinical relevance of brainstem auditory evoked potentials in brainstem disorders in man. *Auditory Evoked Potentials in Man — Psychopharmacology Correlates of Evoked Potentials*. (Desmedt, J. E. Ed.). Brussels, S. Karger Publishing Co., Vol. 2, pp. 45-47, 1977.
6. Stockard, J. J.; Stockard, J. E., and Sharborough, F.: Detection and localization of occult lesions with brainstem auditory responses. *Mayo Clin. Proc.* 52:761-769, 1977.
7. Ahmed, I. and Poulou, K. P.: Bilateral external ophthalmoplegia. *J. Kans. Med. Soc.* 81:457-458, 1980.
8. Starr, A. and Achior, J.: Auditory brainstem responses in neurological disease. *Arch. Neurol.* 32:761-768, 1975.



## Drug INFORMATION

LINDA HOGAN, M.S., R.Ph., *Editor*

### *Ketoconazole*

**Question:** What is the new antifungal agent on the market?

**Answer:** Ketoconazole (Nizoral — Janssen Pharmaceutica) is a new, oral broad spectrum antifungal agent with systemic activity. By interfering with the synthesis of the primary sterol in fungal cell membranes, it increases cell membrane permeability. Other antifungals currently on the market such as clotrimazole and miconazole, share the same mechanism, but do not have oral activity.

**Question:** What are the therapeutic advantages of this new agent?

**Answer:** Ketoconazole is active against the same superficial fungi as griseofulvin, and many of the same fungi as amphotericin B (Fungizone) and flucytosine (Ancobon). However, it is less toxic than these agents and is not given intravenously. Also, resistance apparently does not develop.

**Question:** How is ketoconazole administered?

**Answer:** Ketoconazole is administered as a single daily dose. Normal adult dosage is 200-400 mg. Ketoconazole may be used in treatment of children as follows:

<i>Body Weight</i>	<i>Dosage</i>
20 kg .....	50 mg once daily
20-40 kg .....	100 mg once daily
40 kg .....	200 mg once daily

Treatment must be continued for adequate periods of time to prevent recurrence. This may involve many months of treatment.

**Question:** Are there any adverse reactions associated with the use of this medication?

**Answer:** Ketoconazole has a low incidence of adverse reactions. Nausea and/or vomiting (3%), pruritis (1.5%), and abdominal pain (1.2%) are the most common. Other reactions — headache, dizziness, somnolence, fever and chills, photophobia, and diarrhea — have been noted. There have also been reports of transient elevation of liver enzymes.

**Question:** Are there any drug interactions?

**Answer:** Ketoconazole requires acidity for dissolution and therefore absorption. Agents that decrease gastric acid secretions — such as antacids, anticholinergics, and H<sub>2</sub> blockers — should be given at least two hours after ketoconazole administration. Although ketoconazole is 99 per cent protein bound, there is no evidence at this time that suggests a clinically significant interaction with oral hypoglycemic or oral anticoagulant agents.

**Question:** How is ketoconazole supplied?

**Answer:** It is available in 200 mg scored tablets.

*Submitted by Jeanne Mullen, R.Ph.*

The Drug Information Service is maintained by the Department of Pharmacy at the K.U. Medical Center to promote rational drug therapy. The Service is staffed by clinically oriented pharmacists with access to accurate, current, and unbiased information. Information is available free of charge to any health care practitioner involved with patient care. Contact:

Drug Information Service  
3930 Cambridge  
Kansas City, KS 66103

Telephone (any time): 913-588-2328





## *What's Your Handicap?*

Ordinarily we try not to pursue the same subject in back-to-back offerings. And ordinarily we avoid emphasis of our personal interests, assuming that anyone pursuing a continuing writing schedule reveals more of himself or herself than any reader wants to know anyway. In this instance, however, the matter of physical disability in physicians, which we touched on last month, was coincidentally revived right after press time for that issue by receipt of another letter from an erstwhile pen pal of ours by the name of Frank Zondlo.

We first became acquainted (by correspondence at least) something over a year ago with this remarkable young man (he might question both qualifications but the first is documented and the second is relative to our own age, so incontestable) when he wrote to ask the cooperation of the JKMS in publicizing his efforts to identify physically disabled physicians throughout the country. His purpose was to promote an organization of such individuals to profit by exchange of experience and knowledge of the rehabilitation process and to provide support and guidance for newly disabled individuals but in particular to encourage the return of disabled physicians to some degree of active practice. Working with a projected figure of well over 4,000 physically disabled physicians, he proposed that if they could be directed into proper channels, it would be a valuable addition to our medical manpower aside from its beneficial effect on the individuals.

He was well qualified to pursue the matter. Several years ago, while still in medical school, he sustained severe injuries including loss of one leg in an auto accident. A severe infection during his recovery was treated with gentamycin resulting in total deafness from ototoxicity but, as he agrees, better deaf than dead. The common feature of deafness plus our interest in the progress of his efforts has led to our continued exchanges — and a degree of education for us about this matter of the handicapped physician.

As Dr. Zondlo's recovery permitted him to begin redirecting his life, he found (as others have) that there was no established program or responsive organization to which the newly-disabled physician can turn for assistance in reeducation and adaptation of his limitations to a new line of endeavor. This is not to say that rehabilitative programs do not exist, but they are standard procedures aimed at enhancing recovery and establishing the optimum capacity for continued existence. It is the question of what to do with that existence that confronts the disabled physician: What do I do now?

For his own part, when his recovery was sufficient to permit active study, Dr. Zondlo attempted a residency in radiology which accommodated his motor limitation but was impossible in view of his communication problem. He then concentrated on learning signing and took a psychiatric residency aimed at extending psychiatric service to the hearing impaired. He is now augmenting that with a residency in physical medicine and rehabilitation and pursuing a heavy writing schedule. His personal experience and the information he has gained in his efforts to identify other disabled physicians have produced some points of interest.

Perhaps the most compelling item is the matter of numbers. Despite intensive canvassing for disabled physicians through notices in more than 60 major medical publications, he has had responses from fewer than 300 individuals. How this number relates to the actual number of such physicians is unknown but it is apparent rather promptly that getting a valid number is problematic at best. Was the original estimate so far off from the true figure? Was the method of locating them inadequate for its purpose? Was there simply a lack of interest on the part of the subjects to pursue the matter? Regardless of the answers to these questions (if there are answers), one point has emerged from his exchanges with those individuals he has heard from: they simply did not consider themselves handicapped. Obviously, their

limitations determined the type and extent of their medical function but, having achieved that, they for the most part considered themselves as physicians once again and not to be categorized as a thing apart. As interesting and encouraging as this may be, the fact that some individuals have found the means to return to service may not answer the original concern and, with such a small number identified, the question remains, are there others yet to be found who could profit by the assistance of their (unadmittingly) disabled colleagues?

Obviously, the attention generated by any condition is related to the number of subjects involved. In these days when we worship volume as a prime determinant of the worthy, the degree of disability undoubtedly enters into the matter since it divides the whole into lesser portions. So far, for example, only two profoundly deaf physicians — other than the two of us — have been located. In this connection and in our own experience, we can report that as the continuing medical education movement was gaining steam, we wrote to the AMA for advice on programs utilizing only visual materials since the great majority of programs relied mainly or totally on hearing. Though some suggestions were forthcoming, the revealing answer was that the question had never come up before. We admit to wondering at the time how many of our hard-of-hearing colleagues had been sitting in meetings having little or no idea of what was going on but getting credit for learning. It seems that perhaps our cynicism wasn't justified after all — it really is an exclusive group. (We did, of course, find some courses that satisfied our needs but not before we found out just how ridiculous some of the "medical" education programs were.)

A concerted effort on behalf of physically disabled physicians undoubtedly suffers from another form of fragmentation — the diversity of forms of physical disability and the consequent need to provide services of differing character. The motor-impaired (who in themselves comprise a wide variety of functional limitations) have quite different problems from the sensory-impaired. The young disabled physician faces a much different situation from the older physician who may be approaching the end of his service anyway (but doesn't necessarily want a shove). The individual who suffers a sudden disability (such as deafness from ototoxicity) has to cope with a different set of concerns from the older physician whose disability comes on gradually — and must decide at some point that it is time for a change.

The assessment of the capabilities is fundamental

to assessment of the condition but the disability itself is a clinical entity — observable, measurable, objective. Needs are superimposed on it but motivation executes the response. Motivation is an internal expression, the subjective force that dictates the repair, redirection, and recovery. (This is not to exalt it in the manner of the inspirational periodicals — in our own case, we simply had to make a living and that's about the dandiest motivator there is.) But it seems to us that motivation probably defines three groups. The first comprises those whose motivation is utilized in pursuing their new careers and professional and social lives without need (or perhaps capacity) to seek additional compensation in disability-related activities. The second is composed of those individuals who, beyond that point, have the need to develop their new roles by joining with those of common concern. But third, there are those who have not reached either of these points, the ones who could profit from the information and experiences to be derived from their impaired peers, the ones Dr. Zondlo was primarily seeking.

So, many physicians have made an adjustment and do not therefore consider themselves disabled. Others, perhaps, simply don't feel inclined to "join" anything. Their energies are sufficiently dissipated by the demands of their solution that they have no desire to pursue any additional disability-oriented efforts. Again, the timing of the handicap may be a factor. We have at times felt remiss that we have not been more actively involved in what is identified as the "deaf community" but that would require a psychological adjustment which we, for better or worse, have not made. In other words, we are a hearing physician who has become deaf, not a deaf person who has become a physician. And we suspect that similar thinking on the part of many disabled physicians enters into their feelings about "organizing" on the basis of this common denominator.

Despite the relative infrequency of such cases, there does remain the fact that a source of guidance and support could be of great help to the physician who becomes disabled — whether suddenly or with a period of onset culminating in the acceptance of the fact that the time has arrived. It is an additional trauma, and offers of help by the profession, however therapeutic in intent, may well meet with hostility and self-pity. Again, we were personally fortunate. We had to do what we presume everyone in that situation has to do: determine the character of our capabilities and turn to individuals who might be of assistance. After assessing the situation and the means of financial survival during a period of



reeducation, we approached those who seemed in a position to advise — some old friends, some totally unknown previously. Almost without exception, the responses were compassionate and positive — not always suitable (the ramifications of hearing loss are not something most people are familiar with) but indicative of concern and worthy of consideration. And the implementation of the resulting plan was contributed to generously by many people. Anyone who admires the efforts of an individual who accomplishes such a change should look beyond that individual to those who made it possible.

For the moment then, we cannot be sure how many physicians are in need of such assistance or

whether an organization exclusively for the purpose of providing it can be developed — even by those who have been through it. It is certainly a valid role for impaired physicians programs to play although the individual members may not have the subjective qualifications present in Dr. Zondlo's effort. There is ample willingness on the part of our colleagues to help (perhaps more than the willingness of the disabled to be helped). It is primarily a matter of getting those in need and the helpers together.

And now we have a ready-made New Year's Resolution. Having used up our quota of personal pronouns through 1982, we'll try to swear off — whoops — there we go again. — *D.E.G.*

---

### **Adriamycin Toxicity**

*(Continued from page 553)*

*Case Three:* A 50-year-old male with adenocarcinoma of the lung with various metastases had been treated with Adriamycin. He was admitted to the hospital for urinary incontinence secondary to benign prostatic hypertrophy which was unrelated to the cancer. He was taken to surgery where cystoscopy and TURP were done under spinal anesthesia. Before surgery, his blood pressure had been in the range of 110/70. After the induction of spinal anesthesia, his blood pressure dropped to a mean of 80/40, and dropped to as low as 65/30. Ephedrine was given which had a mild effect in correcting the hypotension. He recovered uneventfully from the anesthesia and surgery, although his general condition remained poor due to the underlying carcinoma.

*Case Four:* A 75-year-old male with metastatic carcinoma of the left ureter had been treated with Adriamycin. He was admitted to the hospital for repair of an inguinal hernia. This was done under spinal anesthesia. Shortly after induction his blood pressure dropped from 120/70 to 80/50. It remained

there for approximately ten minutes even after the patient was given intravenous ephedrine. His blood pressure slowly rose to more acceptable limits. He has had no other problems from the surgery or anesthesia.

### **Conclusion**

Patients who have been treated with Adriamycin will probably have some degree of heart weakening. During anesthesia, the physiological reserve of the heart is exceeded and hypotension may occur. In evaluating patients who are to undergo surgery, past history of cancer and especially the history of the drugs that have been used to treat the cancer are very important. When Adriamycin has been used in sufficient dosage, there is a strong possibility that hypotension will occur. In this type of patient, some form of monitoring of blood pressure should be considered during surgery. An arterial line and Swan-Ganz catheter to measure pulmonary-capillary wedge pressure would be helpful in this situation.

A list of suggested reading is available from the authors.

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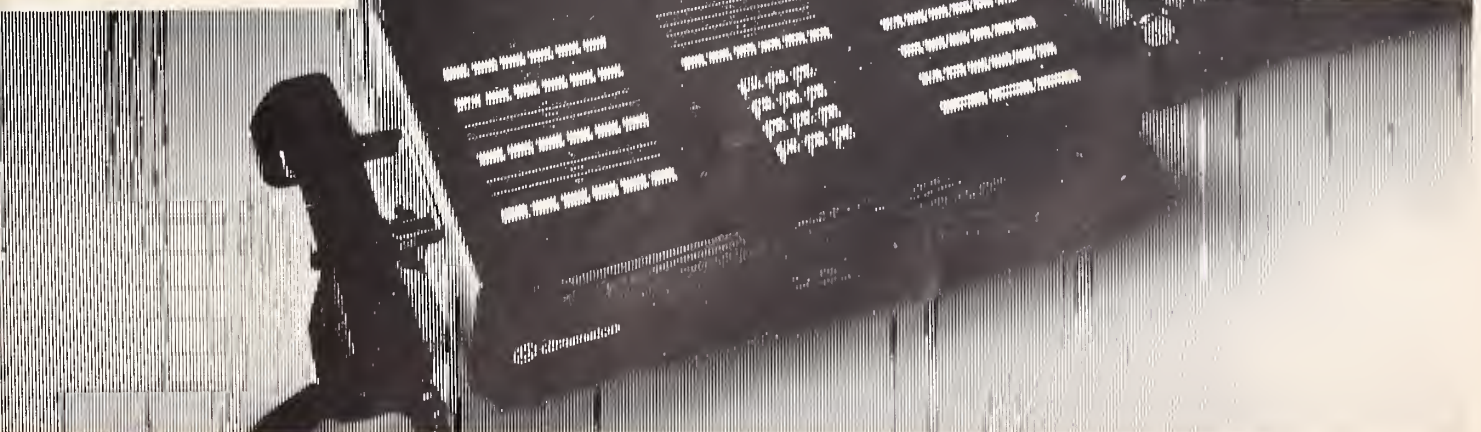
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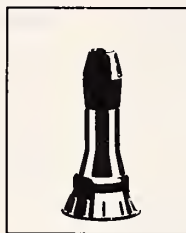
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The Kansas Medical Society Impaired Physicians Program is now operational. If you desire more information concerning this program, if you know an impaired colleague who needs help, or if you are concerned about yourself or your spouse, please contact one of the Committee members nearest you, as listed below, or the KMS Executive Office. All such contacts will be held in strictest confidence and the caller need not reveal his name, if he/she so desires.

Alcoholism, other drug abuse, and medical/neurological/psychological problems are potentially treatable conditions. All impaired physicians should be encouraged to seek help at the earliest possible time in order to retain or regain full effectiveness to practice medicine. Please contact one of the following:

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**Robert P. Hudson, M.D., Kansas City . . . (913) 588-7040**  
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## Anorexia Nervosa

(Continued from page 570)

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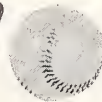


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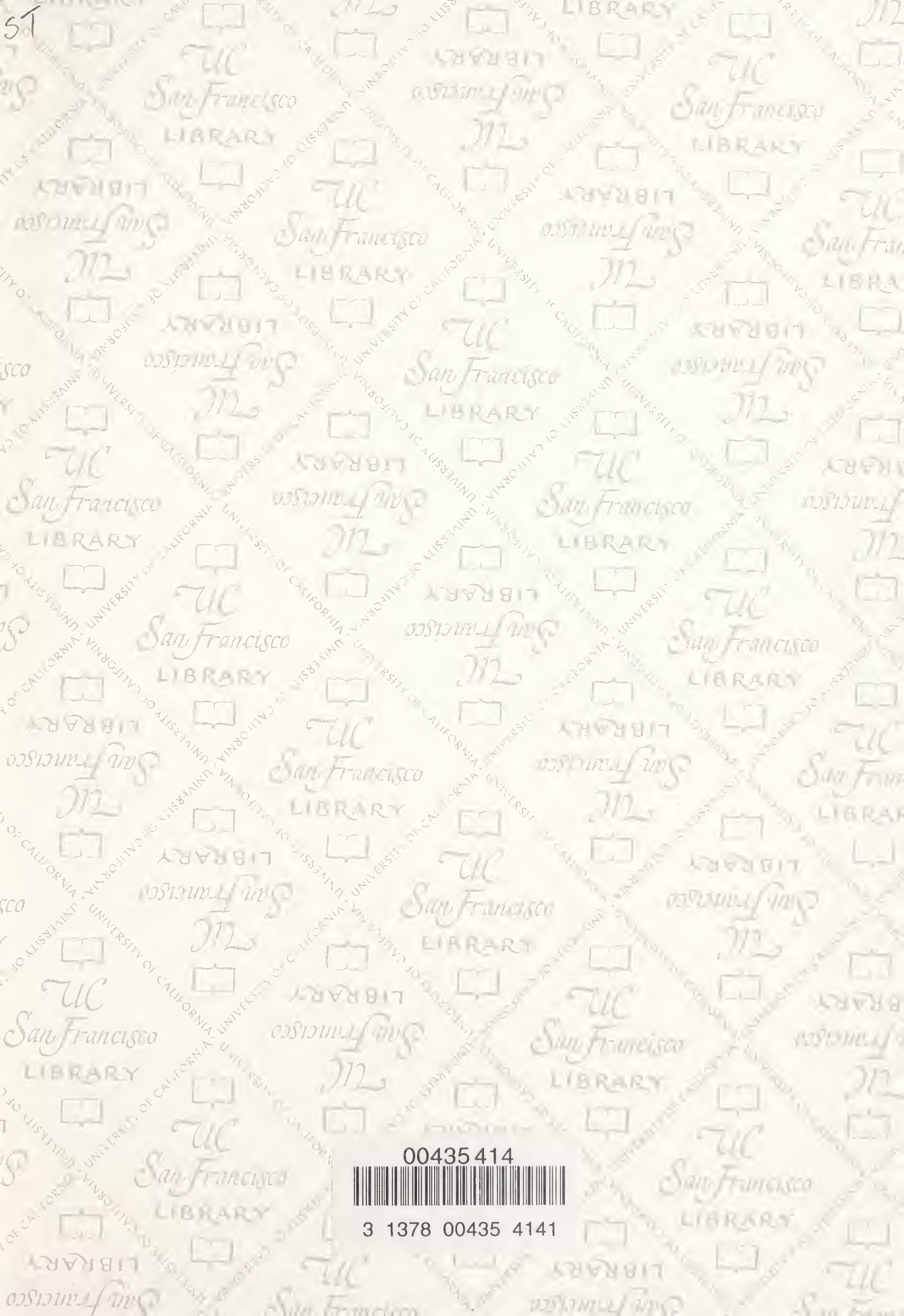












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